

ENHANCING BOLD COLLECTIVE ACTION: A VARIABLE GEOMETRY AND INCENTIVES REGIME

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INTRODUCTION

The powerful potential of international cooperation is increasingly evident, both in climate change literature and through the actions of many Parties in the United Nations Framework Convention on Climate Change (UNFCCC), as a new driver to the often-stalled climate change negotiations.

Rather than focusing on zero-sum approaches in which one party wins and another loses, a cooperative approach highlights opportunities where mutual interaction renders benefits to all participants and identifies incentives that could advance cooperation—particularly for majorities, or groups of Parties, who gain more by acting together. As Garibaldi (2009, 2013) noted, the best outcome for a large majority of the UNFCCC Parties is to take measures to limit their greenhouse gas emissions to achieve the targeted below 2°C level of global warming; region-based modelling, as well as a growing body of literature shows that for a large majority of parties, the cost of dealing with the devastating impacts of not achieving this target are greater than the costs of meeting it (Garibaldi, 2014; den Elzen et al., 2014). Thus, the challenge is to translate the interest of the majorities into a regime that benefits the whole.

Unlike the traditional Kyoto Protocol's top-down, regulatory approach, the approach of the UNFCCC's Ad-Hoc Working Group on the Durban Platform for Enhanced Action (ADP) to the agreement scheduled to be adopted

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at the 2015 Paris Conference of Parties includes many bottom-up, self-determined elements in an effort to create an inclusive, binding regime that will offer opportunities to develop new cooperative schemes to enhance ambition in the future.

A New Approach to Climate Change Action

This paper explores the benefits of including bottom-up elements in new types of incentives to support collective global climate action. It considers the opportunities for climate change action inherent in moving from a regime focused on targets, burden sharing, and sanctions—akin to the Kyoto regime—to one focused on incentives for universal, if differentiated, action and collaboration across groups to pursue common, if differentiated, benefits.

Rather than a “one-size-fits-all” approach in which action is tethered to the consensually agreed lowest common denominators of groups of countries, this proposed approach would enable self-identified and self-organising groupings (including subnational and regional actors) to tailor actions and incentives across self-interested aims—all in consonance with the below 2°C warming goal and the long-term aims of the Convention.

This approach advances capacity-building, technology, finance, and other climate change action aims more quickly than other approaches. Cooperation and action towards common benefits, as well as universal transparency and increasingly stringent monitoring, reporting, and verification (MRV) considerations would be at the core of this approach—with all countries needing to comply with common MRV standards, but with some willing to advance them even more as enabling environments expand.

Harnessing the interests of smaller groups could also diminish free-riding incentives for countries that want to reap the benefits of a stable climate without contributing to efforts to reduce greenhouse gas emissions and fossil fuel usage—thereby disincentivising one of the principal challenges to a collective action regime in the benefit of a public good. However, the long-term benefits of collective climate action may not often be visible in the political short term, and near-term goals may not translate to collective action.

Moreover, the benefits of compliance and progressive action within the regime would be more readily visible as they would be seen in the short term by the acting countries, and not only in the long term through the public good.

This approach to collective action is called “variable geometry” because it proposes that a regime can change its shape to support and encourage those wishing to move forward faster, without prejudice to any principle of the Convention, the required transparency, or the achievement of a less than 2°C goal. The approach also deals with the well-known “tragedy of the commons” idea of collective action, in which villagers’ exploitation of their common land in pursuit of their own self-interest ends up destroying the commons; variable geometry, instead, seeks to align collective incentives and transparency with regional and individual Parties’ long-term interests to sustainably pursue both individual and common goals, thus producing benefits for all.

Structure of this Paper

This paper has three main sections: (1) a brief description of the variable geometry approach based on collective action, (2) elements needed for collective action arrangements, and (3) how to make collective climate action happen sustainably, plus a conclusion.

The first section describes the variable geometry approach and its components and compares this approach with the conventional symmetric geometry approach. The second section describes collective action theory, explaining how free-riding and other common problems have been addressed in theory and practice, as well as describing benefits from collective action generally, and further discusses the elements of a variable geometry regime. The final section reviews the institutions, coalitions, “clubs,” and incentives and sanctions designed to deliver lasting collective climate change action through collective action and the variable geometry approach. It highlights the fact that for a majority of Parties, an ambitious activist position in which they contribute in a substantial, but differentiated, manner to a

high-ambition coalition is preferable to making no contribution in a low-ambition coalition. Next, it offers a proposal for sequencing combinations of incentives to support progressively more ambitious actions by countries, and to promote additional combinations of Parties to align towards a high-ambition outcome.

The paper concludes that a new climate regime with bold collective action would fit well with the principles of the Convention.

THE CHALLENGE OF CONVERTING SELF-INTEREST TO COLLECTIVE CLIMATE ACTION

The challenge for using collective action in negotiating a climate regime is to catalyse Parties' self-interests to create institutions that allow collective efforts through conditions offered by the emerging regime itself. The regime can highlight cooperation opportunities to mitigate emissions and reduce climate-change impacts, while enhancing adaptation to the climate effects already taking place among smaller groups of Parties. Properly done, this regime can create self-reinforcing arrangements where its aims become the vested interests of most, and eventually all Parties, optimally aligned around the Convention's ultimate objective—avoiding dangerous anthropogenic intervention with the atmosphere—through cycles of cooperation.

Any lasting and effective regime that supports interested Parties as they organize themselves to deliver the conditions of low-carbon development is, in itself, their first reward. The more successful the regime, the more it will diminish the cost of climate change impacts, the major cost for most Parties to the Convention, as well as delivering among other things, broader food, water, and energy security. Moreover, by exploiting mitigation and adaptation synergies, countries could prepare better for emerging climate and social changes, while contributing to solving the climate-change problem, rather than making it worse by not acting at all.

A Variable Geometry Regime

The “variable geometry” regime has a common climate-action purpose, but with an initially diverse—though not divergent—pool of nationally determined contributions and policy pathways allowing for means to manage, enhance and strengthen collective ambition to achieve the below 2°C warming goal/target. Such a regime would use a long-term goal, with ratchet mechanisms to increase the level of ambition by all of groups of Parties, with universal, if differentiated, action. It would focus debate on enhancing long-term cooperation and transparency and deterring free-riding.¹ Under such a regime, an enabling environment to facilitate the collective achievement of the shared temperature goal would expand as action expands, addressing interests of both developing and developed countries. More resources would naturally flow to the most action-oriented Parties, with more-developed countries holding a stake in the iterative creation of enabling environments for mutually beneficial cooperation opportunities. A variable geometry regime would be aligned with the principles of the UNFCCC, but where actions by Parties highlight incentives for individual or groups of countries to move beyond a floor of minimum legal requirements; it would support early movers as they advance.

A variable geometry regime would allow Parties to graduate their approaches to sustainable development within their evolving respective capabilities to achieve the below 2°C goal. Without prejudice to the responsibilities embodied in any principle of the Convention, leadership and action towards sustainable development would be seen side by side with incentives and initiatives for bold action by all Parties, regardless of where this leadership emerges. Convention principles would be prompts for universal action by all, emphasize positive incentives, use capacity-building and means of implementation to foster additional action, and make universal rules to prohibit backsliding and promote adherence to the below 2°C goal. Finally, it would allow groups of Parties willing to do more to organize themselves to lead the way by using more ambitious actions and/or more stringent rules to diminish impacts and harness the advantages of cooperation.

The Role of Incentives

When considering incentives under this regime, one must distinguish between zero-sum incentives, which operate as fixed subsidies or transfers from one group member or group of members to another member or group, and non-zero-sum incentives, which expand as cooperation by Parties within the regime expands. Zero-sum incentives, though simpler to visualise, are difficult to maintain sustainably at scale and are politically difficult to maintain among donor constituents in the long run.

A variable geometry collective action regime must start asymmetrically because national circumstances and respective capabilities, as well as development needs, vary widely from country to country. Yet from this starting point, signalling and incentives must align to encourage the convergence towards low-carbon resilient pathways, with the associated benefits of enhanced capacity, new economic development paradigms, climate impact avoidance, resilience in water, food and energy, and the plural health benefits associated with low-pollution economies.

Encouraging Bottom-Up Action

The bottom-up elements of cooperative action arrangements aim to allow sovereign choice of development, but to ease or lubricate pathways that highlight low-carbon resilience for development in terms of the aims of the Convention for 2°C warming goal/target and impact-avoidance. Including these bottom-up elements allows a broader range of countries to cherry-pick their pathway, but with enough mass to achieve meaningful economies of scale. The natural progression of cooperative action in the new agreement would be to allow, foster, ease

and incentivise convergence on sustainable, resilient, low-carbon development pathways from the very diverse starting points of today.

Benefits of a Variable Geometry Regime

The variable geometry regime would create conditions for more focused incentives for quick-action development paths with the understanding that MRV and accounting requirements for all countries need to eventually advance to economy-wide approaches.

A variable geometry approach would reward Parties that can find ways to move faster, and benefit from doing so. Greater benefits, including finance, technology and capacity-building, would accrue to Parties moving earlier in a cooperative and collaborative association of climate action. As will be seen, this approach disincentivises free-riders and yields a diminishing pool of benefits to climate-action laggards. Moreover, a variable geometry approach supports not only the general common resource, the atmosphere, but also provides space for communities to promote programs for the sustainable appropriation of regional, national or subnational ecosystem benefits within a context of national and international climate action. Thus, local climate action ends up aligned to incentives for action pointing in the same direction as those supporting international collective action, engendering a new, positive political dynamic toward climate-change action.

The current symmetric geometry regime and the variable geometry collective action regimes are compared in Table 1.

Table 1 | **General Characteristics of Symmetric and Variable Geometry Climate Regimes**

DIMENSION	SYMMETRIC GEOMETRY	VARIABLE GEOMETRY
Groupings	Broad groups of Parties treated equally within their groupings	Parties may belong to broad groups, but can also act within smaller multigroup membership arrangements with each subgroup having its own governance arrangements
Climate action philosophy	Parties act within targets based on broad groups, with little or no differentiation among Parties within a group	Parties act within multiple groups, some larger, some smaller; each group with its own scheme of aims and incentives
Incentive scheme	Support is based among larger groups, with no clear, direct incentives for individual Parties engaging in ambitious climate change action agendas	Parties moving faster within their groups reach capacities that allow greater interaction within the group and greater interaction with more advanced groups
Enabling environment	Equal to all Parties within large groups, regardless of subgroup membership	A common base across large groups, but specialized enablement within smaller groups of Parties willing to advance faster and earlier together
Measurement, reporting, and verification (MRV)	Equal to all Parties within large group(s)	Common transparency standards for all; additional increased stringency to those within more action-oriented and enabled groups of cooperative Parties
Mitigation and adaptation	Treated as separate unrelated silos, perceived trade offs if dealing with one or the other	Treated as complementary and related; synergies between both pursued where available to raise collective ambition
Legal form	Legally binding aspects apply to all	Legally binding aspects apply to all, with additional rules within self-defined subgroups
Long-term aim	2°C trajectory, though enablement for this is chiefly predicated on support or transfers. Co-benefits are incentives, but not central	2°C or better trajectory. Groups are focused on direct group benefits of ambitious climate change policies and their co-benefits, and the support typical for group aims
Membership	Parties are generally in one group or another, with no incentive to move to more ambitious groups	Parties may participate in any number of groups with any other Party
Indicative groups	Least developed countries, developed countries, developing countries	REDD+ grouping, regional action platforms (Majuro, Quisqueya), agricultural MRV grouping, Carbon Market group, Resilient Cities group

Source: Compiled by authors.

COLLECTIVE ACTION ARRANGEMENTS FOR A VARIABLE GEOMETRY REGIME

A new climate change regime faces a peculiar dilemma, common to many regimes addressing collective action challenges for common resources: it must impose constraints against free-riding on all Parties, while at the same time allowing Parties freedom to act as they wish in deciding how they are going to set up these constraints. In other words, those using the atmosphere as a common pool resource are in a position of autonomy of action as well as interdependence, since the appropriation of the atmosphere by some affects others and the capacity of the atmosphere to carry greenhouse gases without catastrophic effects on human life is limited. In this situation players have an incentive to cheat or seek a “free ride” by letting others do the work of emissions control in hopes of benefitting, along with the workers, from a positive end result. Of course, if there are too many free riders, the work may not get done. The challenge remains how to transform this issue of co-appropriation from one of conflict or competition into one of cooperation.

The Collective Action Problem

The effective collective management of the global atmosphere yields common benefits in terms of expanded cooperation and diminished climate change impacts. However, many Parties choose to mismanage the atmosphere for short-term gain. Asking why this is so from a collective, rather than individual, perspective can yield interesting insights. Most of the literature addressing this issue has taken this failure as a variant of Hardin’s (1968) “tragedy of the commons” metaphor, in which individuals using a finite common resource ultimately degrade it beyond repair. In a similar vein, Gardiner (2006) framed the climate problem in the “prisoner dilemma” format and the inadequacy of the existing UNFCCC institutional setting to resolve the climate change problem—where the pursuit of individual self-interest under a poor institutional context results in collective failure.

Collective action theory (Olson, 1965)² argues that collective action is enhanced in smaller group settings—where coordination and monitoring to avoid free-riding is easier—or when a majority subgroup of members within a larger group derives more benefits than costs from the provision of the public good. In this case, the public good is the proper long-term management of the atmosphere, including the prevention of damaging impacts to ecosystems and human systems as noted in the Convention. The challenge is how to avoid free-riding in managing this public good as group numbers increase. Thus there is a need for mechanisms to prevent the groups from growing without the means to coordinate action, and the need to maintain small group arrangements as the group grows in size. Moreover, collective action theory states that free-riding in larger groups can be minimized through selective incentives that reward the protection of the public good, including by excluding free-riders from access to certain group benefits or by imposing sanctions on them.

Ways Out of the Collective Action Dilemma

In a now classical analysis, Ostrom (1990) argued that the empirical settings upon which collective action dilemmas are predicated can be themselves taken as variables, with the analysis addressing instead how Parties’ capacities for action can be changed so as to avoid a “tragedy of the commons” conclusion. Her analysis showed empirically how the capacity to communicate with each other, to develop trust or a vision of a shared common destiny, affected Parties’ capacity to act collectively and move in the direction that was clearly in the best interests of all. Without these elements of communication trust, and shared destiny, powerful individual Parties or entrenched interests could block collective action and prevent moving towards the best interests of all (even their own interests, in the long-term).

Box 1 | Collective Action Lessons from other Multilateral Environmental Agreements

Several multilateral environmental agreements offer examples of elements and practices that avoid free-riding and enhance collective action. These involve, among others, self-defined coalitions of interested Parties,¹ which can grow in scope, either through selective and self-defined engagement, targeted assistance, and/or periodic revisions of the collective arrangements. Examples include the Stockholm Convention on Persistent Organic Pollutants, (152 signatory states), and the Montreal Protocol on Substances that Deplete the Ozone Layer (a protocol to the Vienna Convention for the Protection of the Ozone Layer, 197 ratifiers).

The Stockholm Convention, through multistakeholder teams, improves its performance by using smaller numbers and engaging selectively with subnational actors for broader national development agendas—an effective way of implementing national plans.

The Montreal Protocol secretariat projects a stabilization of the Ozone layer by 2050, which implies a clearly successful regime, as this stabilisation stems directly from the operation of the Montreal Protocol. This Protocol enhances collective action through a targeted assistance program aimed at capacity-building and institutional strengthening, as well as coordination at the international level to ensure continuity and sustainability of action at the country level. It follows a graduated approach, controlling measures aimed at reducing consumption of ozone-depleting substances, and has been strengthened through adjustments and amendments based on periodic scientific assessment, which is described as a “start and strengthen approach” with incrementally added measures delivering a current phase-out basket of 96 chemicals.

Another interesting arrangement is the Convention on Long-Range Transboundary Air Pollution (LRTAP), with 51 signatories. It aims for Parties to limit and, as far as possible, gradually reduce and prevent air pollution, principally for human health considerations. It is an interesting example of progressive expansion of a club, including a “ratcheting” mechanism for extended application. From an original focus on health concerns regarding pollutants that may originate in one country and are subsequently deposited in another, the LRTAP Parties extended their discussions in 1999 under the Gotheburg Protocol to include and abate acidification, eutrophication, and ground-level ozone—a progressive expansion of the original club.

While interesting, these examples are less than universal and limited in membership. The challenge remains to find ways to combine the capacity for collective action that less-than-universal group membership can provide, while enhancing the capacity of the climate regime to encompass increasingly larger numbers of Parties until it becomes universal in scope.

Note: 1. As mentioned, small numbers always facilitate collective action, easing to monitoring action and so preventing free-riding. The challenge that will always remain is how to avoid free-riding as group numbers increase. Thus the creation of mechanisms to prevent the groups growing without means to coordinate action.

Following Ostrom and the examples of multilateral environmental agreements noted in Box 1, it can be argued that there are indeed ways out of the tragedy of the commons and the prisoner’s dilemma that groups can devise by forming coalitions, clubs, tiers, and various other collective action support schemes.

For example, in the context of the emerging climate regime, the concept of free-riding could be redefined to be dependent on country capacities and on their actions aligned with the below 2°C warming goal/target; thus countries without requisite capacities cannot be considered as “free riders.” On the contrary, free-riding would refer to countries with capacity who do not use their capabilities to achieve the agreed below

2°C warming goal/target and low-carbon, resilient development.

Latent possibilities have been enhanced by a better understanding of the expected impacts from climate change, and a few years of experience of Parties organizing themselves to enable options for climate action—in mitigation and adaptation—as a way to avoid future climate change impacts. This understanding and experience of ongoing and imminent impacts can provide momentum for an interaction that brings about a regime attractive to a broad number of participants clearly aligned to the globally agreed goal of 2°C or less maximum global warming.

Climate Change Impacts Have Become Apparent

In recent years, not only have studies predicted specific regional impacts of climate change scenarios, but many areas have actually begun to experience disruptions likely caused by a changing climate. The IPCC 2014 working group II on impacts, adaptation and vulnerability (IPCC 2014a) noted that changes in climate have caused strong and comprehensive impacts on natural and some human systems on all continents and across the oceans. Changing precipitation patterns and melting snow and ice are altering hydrological systems in many regions, affecting quantity and quality of water resources. Climate change affects the behaviour of many species, and has produced more negative than positive impacts on crop yields. Impacts of climate-related extremes are predicted to alter ecosystems, disrupt food production and water supply, damage infrastructure and settlements, and cause disease and death. These climate-related hazards exacerbate other stressors, often with negative outcomes for livelihoods, especially for people living in poverty.

These impacts are shared problems that can be addressed to create a common interest in combining adaptation and mitigation action in a way that enhances further collective climate action.

Nations Build Trust Through Voluntary Climate Groups

While in the short-term, vulnerability to these impacts can be reduced through regional and local adaptation, avoiding further impacts can be addressed only through coordinated and ambitious long-term, and early onset international mitigation. Climate change cannot be resolved by individual countries; reductions in any given country will not have the required effectiveness unless such measures are equally taken up by other Parties, as the proportion of emissions by any one country is insufficient to achieve stabilization in the context of total global emissions.

As the problem intensifies and global negotiations drag on, new alliances and cooperation schemes have emerged to accomplish a substantial amount of shared work. For instance, the Cartagena Dialogue has focused on enhancing cooperation between like-minded, proactive countries with mitigation goals and commitments,

including developed- and developing-country Parties and groups.³ The Mitigation and MRV partnership, jointly led by Germany and South Africa, has focused in improving mitigation transparency and MRV across groups.⁴ A new Latin American negotiation group, the Association of Independent Latin American and Caribbean states (AILAC) has focused on the importance of cooperation and collaboration across the climate regime to reduce impacts and gain benefits.⁵ Acting Together for Bold Outcomes (ATBO), a project supporting action by a group of almost 130 countries from the Least Developed Countries (LDC) group, Alliance of Small Island States (AOSIS) and Latin America and the Caribbean (LAC), encourages high mitigation ambition in negotiations and builds political momentum to an ambitious middle ground within the UNFCCC negotiations.⁶

This enhanced cooperation has built trust across groups and parties, and improved means to promote transparency for climate action, if not across all parties, at least across an increasing number of Parties and groups. More options are likely to become available, as the effects of climate change and the opportunities to address them within low-carbon pathways are becoming better understood in the context of specific resources or ecosystems.

The Benefits of Collective Action

Indeed, if effective, a lasting, ambitious and universal climate action regime would present a number of benefits just through its presence. While the main benefit is reduced climate impacts through enhanced mitigation, other benefits can derive from sustainable development. IPCC 2014 working group report III (IPCC 2014b) lists multiple co-benefits from climate policy. Climate policy intersects with other societal goals creating the possibility of co-benefits or adverse side-effects. These intersections, if well managed, can strengthen the basis for undertaking climate action and support development at the same time. Mitigation and adaptation synergies can positively or negatively influence the achievement of other societal goals, such as those related to human health, food security, biodiversity, local environmental quality, energy access, livelihoods, and equitable sustainable development; conversely, policies towards other societal goals can influence the achievement of mitigation and adaptation objectives.

Moreover, well-designed systemic and cross-sectoral mitigation strategies can be more cost-effective in cutting emissions than a focus on individual technologies and sectors. At the energy system level these strategies include reductions in the greenhouse gas emission intensity of the energy supply sector, a switch to low-carbon energy carriers (including low-carbon electricity) and reductions in energy demand in the end-use sectors without compromising development.

As we will see later, the agreements reached in Cancun and Durban created additional benefits in terms of finance for low-carbon resilience, finance for adaptation, technology transfer, and opportunities to use markets and other mechanisms of cooperation. These benefits will offer multiple opportunities when realized; indeed, most can be harnessed through incentives for participation, with Parties agreeing to further reward early leadership. Maximizing the collective appropriation of these collective benefits can operate as an incentive within the regime, which would benefit those advancing the most mitigation while creating pressures to minimize free-riding, always within Convention principles.

Elements of a Variable Geometry Regime

A variable geometry climate regime would have a number of identifying characteristics or elements. Its core foundation would be cooperation on the ultimate objective of the Convention, where all Parties make contributions to achieve the below 2°C warming goal/target and avoid future climate change impacts. If the regime does not achieve this, all Parties face catastrophic climate impact costs. Upon this foundation, a variable geometry climate regime would stress the predominant role of cooperation and positive incentives for action—while leaving space for a compliance scheme—and emphasize early action and participation, positive linkages between mitigation and adaptation, and the collective benefits resulting from avoiding climate change impacts. A variable geometry climate regime would:

Require all Parties to contribute towards the goal. Inasmuch as all Parties contribute to climate change, it would be expected all would do some mitigation action, but countries with more capacity and responsibility would do more.

Encourage small groups and cooperative partnerships (e.g. investment partnerships, carbon markets, REDD+). As countries advance together in groups, collective action can create expanded cooperative partnerships for low-carbon approaches, carbon markets, and larger investment and financial flows around low-carbon initiatives, while generating sustainable development co-benefits and gains from cooperation initiatives. Countries can advance faster in smaller groups than as a unified body, because smaller groups can define and develop collective pathways of low-carbon development tailored more to their circumstances, provided these are consonant with the global goal and an agreed direction of travel. Smaller groups can grow and include other groups iteratively as part of this greater convergence over time.

Add measures to enhance capacity and collective action. An ambitious regime will expand collaboration opportunities intent on extending capacity-building, finance, technology, and know-how in arrangements that nurture and spur additional ambition. Optimally, this effort could well extend to subnational and civil society stakeholders to spur innovation and support the extension of low-carbon development policies throughout all economies.

Support formal and informal institutional cooperation helping expand proactive groups and coalitions. A variable geometry regime can include side agreements with opt-in arrangements for enhanced action and stringency among more active Parties, while preparing the ground for other Parties with higher engagement costs. Members could organize themselves to act around specific sectors, issues or activities, devise their own instruments for collaboration, and their own transparency and management rules within a context deriving particular benefits for advancement.

Link mitigation and adaptation in high-ambition mitigation pledges. All countries will face increasing costs from climate change impacts and from present and future adaptation. In many instances, adaptation and mitigation activities will overlap in real-world

implementation, and an artificial distinction between these activities in terms of their potential contribution to the international collective mitigation challenge, first, and regional adaptation, second, will miss important co-benefits and sources of finance, technology facilitation and capacity-building. Optimally, countries would promote programs that deliver both mitigation and adaptation from a high-ambition mitigation perspective to lower future mitigation and adaptation costs, alongside true mitigation and adaptation projects. This approach should also eventually enhance the role of adaptation (and eventually loss and damage) alongside the 2°C warming goal/target.

Rely on an enhanced transparency and MRV as central management tools. Both are essential in allowing all Parties to monitor how they are performing collectively towards the 2°C warming goal/target, and track the use and management of the common pool resource in the best possible manner.

Apply common rules but with self-determined different levels of depth. Carbon accounting rules, and their scope, can vary in the level of detail, transparency and comprehensiveness, and could be advanced by those willing to go forward faster. Thus, the regime would provide a common foundation through an MRV and carbon accounting rules-based system, but would also provide a framework allowing those wishing to move further to do so.

Provide means for smaller activist Parties to build pressure for further action. Actions and rules applied to smaller emitters should not be more stringent than those of larger emitters, but smaller emitters wishing to take exemplar action should be allowed to have more stringent rules if it confers benefits to them. For example, taking on wider (or even economy-wide) mitigation targets, could well accrue benefits to the host country and spur more action by others. So, a properly incentivised variable geometry regime would extend greater support—finance, technology and capacity-building—to actors following more stringent climate action measures, but would not provide this enhanced support for actors following less stringent climate action programmes.

Provide compliance or enforcement mechanisms.

There might be a need for a “stick” as well as “carrot” in the regime. Such a stick would enhance the costs to Parties that wish to defect from the regime, or that engage in persistent mismanagement of the universal common resource, the atmosphere. An MRV regime is crucial. Any emerging variable geometry regime could also benefit from exploring additional collective means beyond its legal minimum to rent extraction from nonaction or obstruction to the regime, backsliding) because this would have material consequences to the regime participants’ collective ability to reach and follow a below 2°C warming goal/target.

Focus the Convention principles on the ultimate objectives. Last, but by no means least, principles of this regime should not be an excuse for inaction; rather, they should help support action by all. In the same vein, principles—including common, but differentiated, responsibilities and equity—should be focused on the collective outcomes of the collective action, and the future effects of cooperation.

Incentivising Action, Especially Early Action

In advancing towards a solution along variable geometry lines, Parties must organize themselves to reject solutions that do not address, either in terms of the core science or the substantive collective action challenge, the emissions trajectory required for the below 2°C warming goal/target. The regime should implicitly benefit actors advancing along a below 2°C low-carbon development pathway and disincentivize all others.

In all cases, free-riding by reluctant Parties can be constrained by enhanced transparency, engagement with stakeholders and confidence-building measures being taken up by the majority willing to move forward, side by side with additional, ad-hoc positive and negative incentives within the emerging climate regime supporting enhanced action. Positive incentives would include participation in markets, specialised capacity-building for capacities relevant to more ambitious climate action measures, enhanced low-carbon investment initiatives, as

well as disincentivising high-carbon infrastructures. If collective economies of scale develop, a variable geometry regime can also create and enhance competitive pressure to incentivise larger, more-reluctant emitters to follow suit, while allowing smaller emitters access to benefits through immediate action. Altogether, this would provide political incentives for development policies on a universal 2°C emissions trajectory, as progress could be seen and measured by both large and small emitters, and economic opportunities would be easy to translate for large developing countries.

In principle, developing countries are in a better position to move quickly to a low-carbon development trajectory than developed countries because they have fewer costs sunk in high-carbon infrastructure and require less deviation in absolute terms from high-carbon trajectories. This would be true for all but the largest developing countries. Moreover, developing countries are likely to be more vulnerable to climate impacts than developed countries, so they would have more to gain in an effective regime.

Early action benefits would reward those willing to lead. These benefits include not only slowing climate change, but also creating more sustainable and healthy societies and triggering the action of others.

Sandler (1992) provided probably the first analysis of the climate problem from a collective action perspective. He argued that a division considering both the level of impacts suffered and the capacity to act would lead to four categories of countries: (1) “activists,” with large impact costs and low mitigation costs; (2) “cautious,” with both low impact and low mitigation costs; (3) “unable to act,” with high-impact costs and high mitigation costs, and (4) “unwilling and/or reluctant to act,” with high mitigation costs and low impact costs.

At the time, Sandler himself considered that while in theory acting was to their ultimate benefit, the more affected developing countries might not be interested in advancing this solution because their main focus was on poverty. Nevertheless, the coalitions of progressive

developing countries emerging since Cancun, in Durban and afterwards seem to have proven him wrong.

Current climate literature shows that for a majority of Parties to the current climate regime, most of which are middle- or low-income, the largest cost will be from climate change impacts rather than from efforts at mitigation. Consequently, these countries should be in the activist category.⁷ For these countries, lack of collective action to mitigate impacts will likely increase the cost of the impacts. Conversely, avoiding climate impact costs would translate into the largest gain by a majority of Parties. The countries could reduce costs by cooperating with others to increase the ambition of the collective outcomes—even if they have to contribute substantially to make it happen.

This is not the result of a zero-sum game. Recent research has highlighted that the costs for many developed countries to shift their infrastructure to a low-carbon trajectory is not that much different from the costs for continuing on a high-carbon trajectory, but has additional benefits. European Union countries, the Environmental Integrity Group and some members of the Umbrella Group are moving this way; other groups and Parties could follow suit.⁸

Beyond climate-impact aversion, there are plural co-benefits to comprehensive low-carbon resilience policies and measures, many of which are immediate. Ample evidence documents the notorious health hazards of air pollution, especially in built-up, urban environments, and the intrinsic public health benefits of moving away from fossil fuels.⁹ Low-carbon development and related arrangements are also clearly associated with new economic and employment opportunities, flowing from new technologies and efficiencies.¹⁰ Also, low-carbon development policies and action highlight resilience, especially in urban areas, of food and water scarcity from droughts, as well as resilience from energy insecurity generally, all of which are clearly immediate benefits.

Considering these results and co-benefits, as well as the emerging regional literature on the costs of climate inaction, it would make sense for those interested in further action—and capable of acting on their own, at a national or subnational level—to press for mitigation action within combinations of developed and developing countries that could deliver aggregate reductions required for stabilization below 2°C. As they act, they create conditions for more Parties to advance more climate action. The synergies between mitigation and adaptation would promote additional mitigation contributions from countries otherwise unwilling and/or unable to act. Altogether, such a course of action would reduce impacts, while pushing the regime in the right direction. If free-riding is controlled, it could also contribute to achieve the below 2°C goal.

Leadership and Equity in a Variable Geometry Regime

The variable geometry regime should not be interpreted as a denial of the responsibilities of countries with larger participation in the total emission stock of the past, present and future. By the same token, the responsibilities and capacities of developed countries for causing and solving the climate problem should not be construed as denying developing countries the capacity to act early if they so wish. An obvious tension for such an interpretation could arise from views in the Convention that developing countries cannot act unless developed countries “take the lead” in practically all aspects of climate change action.

However, it would be difficult to argue that the Convention would impede a country that wishes to take a more proactive, bold early action course to do so; it would be against not only their sovereign right but the overall purpose of the Convention. To the contrary, the regime must not preclude means that allow sovereign Parties willing to act to do so, especially if early actors seek the benefits accruing to developing countries that advance early towards low-carbon and climate resilient development.

Rewarding Lead Countries

An optimal arrangement would reward countries that move early to absolute (ultimately economy-wide) emission limitation measures. Some countries may reach economy-wide actions sooner than others, because of relative capacities, but a regime responding to the needs of the majority and the ultimate objective would reward

those that reach it sooner more than those that reach it later, and all must reach it eventually. Of course, there may be a simplification of what “economy-wide” means on de minimis considerations for small economies with marginal emissions, where a material amount of emissions are covered and targeted.

Importantly, first-mover benefits must be felt domestically and not simply at the level of multilateral negotiations—it is essential for political will to articulate impetus for ambition, rather than to rely on ambition coming down from the multilateral negotiations. In a variable geometry regime, the benefits mentioned can include elements of enhanced capacity-building, carbon markets and enhanced, targeted financing for low-carbon development infrastructure and facilities, advancing capacities for more ambitious policies to a below 2°C emissions trajectory.

Equity of Outcomes

This view on the leadership of groups within a variable geometry regime is likely to have an incidence on views around equity, and particularly the division between historical equity and equity of outcomes. In the context of the international climate negotiations, “historical equity” is focused on cumulative greenhouse gas emissions before 1990 and implies that the burden of mitigation lies mostly, if not exclusively, with high-income nations (who have the highest cumulative energy-related emissions). Thus equity requires the establishment of a collective mitigation burden-sharing scheme and the need for developed countries to act earlier and more strongly. However, framing the problem along these lines treats emissions reduction as a zero-sum game, effectively ignoring the difference in benefits provided by wider or deeper global action to reduce emissions.

An alternative interpretation of equity would highlight “equity of outcomes,” or “outcome equity.” This interpretation would consider minimizing the adverse future overall impacts on the majority of countries who typically have lower cumulative emissions and/or—as with the least developed countries—have less capacity to undertake emissions reductions and cope with climate risks and impacts. The notion of overall impacts accounts for both the net (national) costs of national actions to reduce emissions and the (national) benefits of global action to reducing the pace and extent of climate change.

In contrast to historical equity, an outcome equity approach could encourage a race to the top by drawing attention to the net benefits of more ambitious global collective action as well as attention to the distribution of the mitigation costs and avoided climate impacts. Moreover, failing to limit climate change to 1.5° to 2.0°C would also be a major failure of equity, even if the mitigation burden was born entirely by countries with high historical emissions. In this context, equity would relate to both the extent of climate change, and to the distribution of benefits and burdens.

Building Capacity for Climate Action

The majority of developing country Parties, that are better off in a high-ambition regime towards which they contribute substantially (within the existing Convention principles), could frame a regime that evolves so that developing country Parties with low emissions who wish to act early could be collectively enabled to improve their competitiveness in a carbon-constrained future. In such a future, Parties with middle or low emissions would be better off with increased levels of collective ambition. Thus, developing countries interested in improving their competitiveness would have a vested interest in creating governance arrangements that help support their lead in such a race to the top. Such an alternative regime would be built within the existing Convention principles. It would reflect all Parties' sufferings and contributions, with larger emitters doing more—but with incentives for action by all.

Likewise, the incentives of any such variable geometry regime can also take into account the costs of said regime, if possible, by developing capacities in civil society and in institutions to bring down costs of compliance and to foster continuing innovation. In this context, we may begin to think of capacity and the creation of enabling environments as a component of leadership, in terms of an evolving gradient. There is a need for capacity in academia, institutions and civil society—the latter requires a business model, an economic ecosystem, for the required capacities. This could be as simple as a system for consistent, material and regular payment for national communications from developing countries, with payment increasing with the complexity of the information required. These payments would incentivize career planning at academic stages and

the organization of local civil society around the required services, all of which would bring down the transaction cost for investigation, innovation and uptake of these elements of the regime not only at national levels, but also at subnational and civil levels as well.

MAKING COLLECTIVE CLIMATE ACTION HAPPEN SUSTAINABLY

A central consideration of any variable geometry regime is emphasis on cooperation and the extension of collective action benefits, which are inherent for the initial core members, and to others as coalitions expand, without allowing free-riding to flourish. Original participants create conditions to organize and measure action, which should create conditions to attract other Parties to join and repel free-riding actions. If successful, this creates momentum for action and increasingly large economies of scale, allowing the initial group and its nascent regime to extend support to others that may have more difficulty in advancing action on their own. Partnerships could evolve in which developed countries support developing countries that wish to do more, while developed countries also join each other in acting.

Likewise, collective action from these coalitions could be supported through self-defined, multilateral or combined actions and commitments around “clubs” of agents and/or “tiers” of action, all following the concept of a variable geometry arrangement, operating within Convention principles. These arrangements can be considered “opt-in” to the extent that countries that gain from being more proactive could voluntarily comply with more ambitious arrangements. Front-runners would have access to more actions, comparatively more resources, and better-quality sustainable development opportunities than laggards. Moreover, those participating would also enjoy the benefit of shaping the regime evolution and governance in ways that enhance their interests and vision. As a result, the scheme would provide benefits that accrue to proactive members, while free-riders would not get them, and subsequently reluctant Parties could lose benefits of membership. As a result, such an opt-in scheme would operate as selective incentives for collective action, as collective action theory describes.

Cooperative Arrangements

A variable geometry regime would emphasize cooperative arrangements, including the use of long-term partnerships, financial support, market and cooperative mechanisms for technology and capacity-building, shared goals, and options to act together to diminish and/or adapt to climate impacts.

Likewise, a variable geometry regime would benefit from embracing long-term goals, with accompanying mechanisms to measure Parties' performance and collective achievement (some of the potential characteristics including, ratcheting ambition and MRV are noted in other ACT 2015 papers). The longer the overall horizon, the more future transactions there will be between Parties, and consequently, the more benefits any Party has to lose from withdrawing from the regime. This is similar to what is known in game theory as the "folk theorem" (Fudenberg D. and Maskin E., 1986): when a sequence of interactions comes to an end, the party that has an advantage in the next-to-last interaction faces an incentive not to deliver its part of the last exchange, preferring instead to defect and cash in the gains obtained in the next-to-last exchange.

If the regime's temporal horizon extends well into the future (including the future global conditions inherent in a long-term goal), Parties considering a defection strategy risk losing potential gains from future transactions (markets, capacity-building, technology facilitation), which would make them better off in the world described under the long-term goal, provided the long-term goal's conditions are credible. The extended defection threats that occurred amongst various Kyoto Protocol Parties as the second commitment period was negotiated illustrates the potential consequences of a period of exchanges coming to an end, and the importance of a secure long-term horizon. It is practically impossible to increase commitments to action at the end of a regime; therefore, countries need to maintain a long-term perspective within the regime and incremental iterations of review and capacity-building within its time horizon.

Likewise, when considering the relation between ambition and participation, a variable geometry regime would highlight universal ambition through enhanced capacity. This would link many of the key dimensions of climate action, that is, mitigation, adaptation and finance, within domestic climate action and intended nationally determined contributions (INDCs) in the international regime space, motivated by support with finance, technology and capacity-building. The self-incentivising nature of the regime would bring forward synergies between these dimensions to extract further potential mitigation gains from all Parties and further reduce impacts, the key common regime benefit. Thus, instead of diminishing the rigour or strength of commitments to facilitate universal participation (though this may happen at the outset), it would instead encourage achieving the reductions required to arrive to a below 2° goal, welcoming mitigation contributions from all Parties, even the smallest, and pressing from there to those with capacity to contribute more.

In considering whether to focus on action or on capacity, a variable geometry regime would highlight universal action inasmuch as all Parties could respond to climate change with a mitigation dimension included within its INDC response for the proposed agreement to be signed in Paris at the end of 2015. Similarly, rather than allowing backsliding in contributions or commitments from smaller Parties, no backsliding would be tolerated from any party, large or small. Such an approach would make it much more difficult for any large emitting party to excuse its own inaction because of inaction by other Parties or groups of Parties, big or small. Moreover, it would reinforce the case for smaller Parties to press larger ones for further action. The resulting higher overall mitigation would benefit the smaller and more numerous Parties, rather than the few larger Parties.

Table 2 describes some challenges to the existing regime and proposed how a variable geometry regime would address them.

Table 2 | **Some Challenges and their Treatment in a Variable Geometry Regime**

ISSUE	CHALLENGE OR TRADE-OFF	PROPOSED OPTION TO TAKE
Cooperation vs. defection	Alternative interaction strategies can include defection threats (with positive short-term results but catastrophic if materialized and extended) and cooperation (less short-term appeal but better long-term results if materialized and extended).	Focus debate on cooperation and transparency means, rather than defection possibilities and threats.
Participation vs. ambition towards a 2°C goal	Perceived trade-off assumes enhanced participation leads to a minimum common denominator approach, while enhanced ambition leads to a lower level of participation. Alternatively, smaller number groups fragment the regime.	Focus on enhancing ambition and coordinating coalitions within the UNFCCC regime; link mitigation and adaptation within high-ambition pledges.
Incentives vs. compliance	How the regime deals with both incentives (carrots) or disincentives (sticks) and with enforcement or compliance mechanisms can affect cooperation levels.	Emphasize positive incentives for group formation, and include disincentives and compliance mechanisms within them.
Action vs. enabling capacity	Effective implementation is likely to affect and be affected by capacity-building and policy leading to planned action and outcome.	Make commitments universal and use capacity-building and sequencing to prompt additional action.
Burden sharing vs. collective outcomes	Mitigation burden-sharing considerations bind only large Parties, or mitigation is a primordial obligation from all to cooperate to avoid dangerous outcomes.	Common but differentiated responsibilities and respective capabilities used as a prompt for universal, if differentiated, action from all; emphasize equitable outcomes for present and future generations.
Partial or universal “no backsliding”	Only large emitters are prevented from backsliding or are all countries to be prevented from backsliding?	No backsliding is universal. See ICT ratchet up mechanism paper.
Temporal horizon	There is a natural disposition to delay action, and end-game strategy is to defect from the regime on the next-to last transaction; yet delays in action bring higher impact costs for all countries and confuses signalling on the credibility of collective action on the long-term 2°C warming goal/target. The more lags, the more risks.	Signal adherence to a 2°C goal curve as a universal and unavoidable norm. Early action must be prized over delayed action.
Entrenched interests	Lack of a coercive, top-down international regulatory regime means that there is little domestic pressure to move to low-carbon development pathways, as all action would need to come from central-government-imposed regulations that will always have considerable domestic opposition, so domestic country policies could remain at the bottom end of ambition.	General and opt-in, targeted means-of-implementation incentives (finance, carbon markets, education, capacity-building, technology), plus clear and unequivocal signalling from both domestic and international viewpoints.

Elements of Variable Geometry within the Existing Regime

A variable geometry regime can use many parts of the existing regime. Its constituting elements can be identified within current Convention principles and climate regime institutions. However, for it to turn fully into what it can be, a number of things must also happen. In particular, some extended but erroneous interpretations of the Convention regime must be abandoned, with a return to the original interpretation. The regime also requires a view of cooperation that supports a more universal mechanism of collaboration between Parties as they exchange various levels and types of support, means of implementation and action. Finally, ways and means to incentivise groups of countries to do more must be introduced.

The interpretations that must be abandoned include a view of the Convention that excuses action by many under a restrictive interpretation of the common-but-differentiated-responsibilities (CBDR) principle. The CBDR principle clearly states that all countries have a common responsibility, subject to their respective capabilities, even if this responsibility is differentiated. This principle cannot be understood as the foundation of absolutely excusing action for groups of Parties—for whatever reason. In terms of what needs to be reflected in a new treaty, all Parties—large small, or tiny—need to act, even if the extent of their actions is different, considering their own characteristics, and all must cooperate to avoid further harm.

To deter free-riding, the regime would do well in taking a view of the Convention principles that enhance its ultimate objective, the principle of cooperation, and the capabilities of countries to act, rather than only their differentiated responsibilities.¹¹ It would take the CBDR principle as a prompt for universal if differentiated action, with accompanying tiers of varying MRV rigour and means of implementation, finance and capacity-building measures allowing willing countries to do more, even if all don't do the same. This does not excuse developed countries from their required leadership, but allows other Parties to advance and press for further action by all.

When considering equity, the new regime should demand an equitable outcome for both current and future generations. If the effort is equitable amongst current Parties, based on whatever criteria is agreed, but does not deliver the required emission stabilization for future generations, it would be a most inequitable outcome for those most vulnerable, now and in the future.

In terms of cooperation and the role of market mechanisms in a variable geometry regime, instead of focusing debate on the scope and character of market mechanisms (e.g., what markets include and don't include, what conditions attach to participation in markets by all countries, or what mechanisms are required for international exchanges in all circumstances), a more fruitful approach could consider focusing on enhancing and measuring the various forms of cooperation that any sort of support or trading mechanism could produce, including, those where emission outcomes are traded from one jurisdiction to another. Carbon trading is one type of cooperation, but other types of cooperation that can be measured between willing actors, which may include subnational and sectoral initiatives with their own particular rules and requirements, can be included.

Methodologies to measure and track this cooperation, as well as how it contributes to collective efforts, would be developed. This implies a stronger role for MRV and carbon accounting to ensure environmental integrity, as has been mentioned, but would allow flexibility in cooperation and the development of innovative initiatives, which may include express elements of technology and capacity-building alongside finance. In the future, the regime could evolve to greater convergence as capacities move forward and as groups become larger because of demand, greater coverage of low-carbon development policies internationally and economies of scale.

Finally, the regime must incentivize action by groups of countries willing to do more, including subnational arrangements. This is not a new proposal, but is emerging

in the multilateral climate action space—highlighted in the ADP’s work-stream 2 and also in broader negotiations where some developing countries (various Latin American countries, the Dominican Republic and others) are offering more climate action in exchange for further commitments by other countries (Garibaldi 2014). The positions of many of the countries now in the Independent Alliance of Latin America and the Caribbean (AILAC) grouping resulted from this persuasion, and the increasingly proactive declarations by other developing-country groups (including the Least Developed Countries and the Alliance of Small Island States groups) suggest that there is ground for progressive group initiatives to move forwards along common lines. The creation of the Cartagena Dialogue in 2010 is an example of a proactive coalition of developed and developing countries considering how to act progressively, and is also an example of crossing the developing country–developed country boundary. Other examples of subnational initiatives are noted in Box 2.

Structures, Rules and Actors in Variable Geometry Arrangements

The major new structure for the variable geometry regime would be voluntary coalitions, clubs or “opt-in” arrangements of multinational, regional, sectoral or subnational entities that would start out small and both grow and multiply as they achieve successes.

To the extent that a common goal of the UNFCCC system to limit global warming is that the regime should not impede actions to mitigate emissions so as to reinforce development pathways consonant with the agreed 2°C warming goal/target, coalitions, clubs or “opt-in” arrangements would need to (1) always follow the MRV and accounting regimes agreed for commitments under national arrangements, so as to eliminate risks of double counting, carbon leakage and other threats to the environmental integrity of the regime; and, (2) work to the agreed global goal under the Convention.

Each arrangement would include its own benefits and incentives as appropriate, including elements that are both top-down—such as internationally agreed rules on carbon markets—and/or bottom-up—such as sectoral or subnational approaches. These arrangements could help mobilize critical masses of countries as benefitted first movers towards the opt-in scenario; self-defined tiers of opt-in arrangements would help converge policies in terms of concerted climate action, though countries would have liberty and flexibility on implementation, development paths and internal priorities. Box 2 shows current club arrangements recognized by the UNFCCC.

Those engaging in coalitions, clubs or opt-in arrangements do not need to operate outside the UNFCCC regime rules, or use the scheme’s rules to selectively diminish their compliance. Instead, these arrangements could have additional instruments allowing groups to create binding cooperation agreements, while not avoiding or weakening collective and more universal transparency rules. Instead, these coalitions, clubs, or opt-in arrangements could work through a measured, progressive system in which countries could opt into more ambitious rules after they achieve certain results in an evolving, shared low-carbon development pathway. Likewise, none of the self-selected “deeper” rules of a variable geometry regime should be less stringent than any of the “shallower” more encompassing regime (which is “shallower” so as to allow for universal initial inclusion and participation).

Finally, free-riding countries, especially within coalitions, clubs or opt-in arrangements, could well lose participation in general carbon markets or other cooperation initiatives, or be subject to any variety of compliance mechanisms. Free-riding in clubs, coalitions or opt-in arrangements would be dictated by the rules of those arrangements. Likewise, all schemes could be linked to a ratchet-up mechanism, which would help align arrangements with science.

Box 2 | A Variable Geometry regime and opt-in arrangements

A variable geometry regime can have “opt-in” or “club” arrangements operating through multinational, regional, sectoral or subnational entities (including say multinational nationally appropriate mitigation actions), with benefits accruing to members including associated means of implementation (financial, technology and capacity-building arrangements) for more ambitious low-carbon development pathways. Of course, these arrangements must always follow national and international carbon accounting arrangements so as to eliminate double-counting, carbon leakage and other threats to environmental integrity, and must always work towards the agreed global goal under the Convention.

Many examples of “club” arrangements highlight opportunities for benefits in “opt-in” arrangements—many have been recognized at the UNFCCC in the context of the Ad-Hoc Working Group on the Durban Platform for Enhanced Action’s work-stream 2 discussions. A brief sampling of these arrangements, all relatively recent, include:

- LEDES (Low Emission Development Strategies), which combine international support for national planning and implementation for forward-looking national economic development plans or strategies that encompass low-emission and/or climate-resilient economic growth. LEDES can serve multiple purposes but are primarily intended to help advance national climate change and development policy in a more coordinated, coherent and strategic manner. LEDES have been specifically mentioned in negotiating texts from COP 15 and beyond.
- The C40 Cities Climate Leadership Group working across different urbanised centres to reduce greenhouse gas emissions and climate risks. This is essentially a forum to exchange ideas and collaborate on real-world solutions to this challenge.
- Also in the built environment is the Architecture 2030 (www.architecture2030.org) initiative, which exchanges ideas, stimulates collaboration and showcases examples of energy-efficiency in the built environment, assisting in the adoption of best practices and raising capacities for energy and climate resilience.
- The Latin American Water Funds Partnership, a multistakeholder arrangement regarding payment-for-ecosystem-services incorporating Coca-Cola FEMSA (world’s largest bottler of Coca-Cola products), various water utilities, the Global Environment Facility (GEF), the Inter-American Development Bank (IDB) and a number of nongovernmental organizations (NGOs).
- A sectoral example is the Sustainable Apparel Coalition, which includes 30 percent of the global market of the apparel and footwear industry, with its Higg Index on environmental and social sustainability for apparel and footwear products, across its supply chain. This is an essentially private-sector club (including some NGOs) with its own initiatives, but which aligns completely with international sustainable development goals.
- A mitigation – adaptation synergy example is the proposed Quisqueya Platform by the Dominican Republic, highlighting synergies between mitigation and adaptation to raise mitigation opportunities applicable in both developed and developing countries.
- Arrangements grouping both developed and developing countries are exemplified by the Majuro Declaration for Climate Leadership, a voluntary registry for unilateral climate action, which may spur innovation from leadership and new opportunities for collaboration.
- It is important to highlight that even existing arrangements target mitigation actions, adaptation actions and actions including both adaptation and mitigation simultaneously, using foreign and multilateral aid, capacity-building and knowledge-sharing initiatives, using public and private resources for public and private benefits. In other words, these arrangements can be quite comprehensive.

Engaging with UNFCCC Structures

Engagement with broader UNFCCC structures (such as international carbon markets, the UNFCCC's Climate Technology Centre and Network, the Green Climate Fund and so on) would need to come through UNFCCC bodies and channels to manage convergence and coherence of measures, therefore, it may be best to call these external arrangements as accessory or complementary to UNFCCC, so as to allow as much convergence as possible in climate change action (Box 3).

Linking action to the global temperature target, and a commitment to produce arrangements in accordance with the temperature and emissions curve, will produce a clear link to the common benefit provided by concerted collective action. Short-term distortions could be corrected over time as the below 2°C curve is followed, as there would remain incentives to leapfrog immediate targets to establish conditions of competitive advantage for future conditions—these are conditions that reward first movers.

Rules to Prevent Backsliding and Free-Riding

An imaginative use of linkages between support and incentives towards the global temperature target, along with the minimum floor of a legally binding regime might not be enough to alleviate the problems of rogue Parties, backsliding and free-riding. If the regime continues evolving in a negative setting, Parties could consider adding compliance measures for countries or industries that benefit from free-riding, backsliding or policies not consistent with a 2°C low-carbon development pathway. Club, tier, or opt-in arrangements could be a middle ground to create mechanisms, including the loss of access to carbon markets or other benefits, which deter such unwelcome behaviour. Other, more delicate approaches, could involve more direct sanctions, including international public finance and trade measures designed to levy surcharges on goods manufactured under non-compliant conditions—the so-called “border adjustment measures”—though these clearly would be contentious to an inclusive regime. Equivalent sanctions will not affect countries equally, therefore careful consideration is necessary to promote a regime where compliance will help align all Parties to the globally agreed aims.

In a more positive scenario, as Parties act in concert and collectively signal that all development paths into the

Box 3 | **Collective Action and Non-UNFCCC Clubs, a Caveat**

Clubs, coalitions and opt-in arrangements are open to the sovereign act of Parties, allowing a valuable exercise of cherry-picking concepts and constructs, given the diversity of countries and their starting conditions.

However, extra-UNFCCC clubs could be autonomous and consequently not governed by UNFCCC rules or principles. With the creation of one club, other clubs may arise that may not have aims entirely aligned with the 2°C emissions curve, but rather aims that are more immediate or political. This could lead to confused and inconsistent signals for the private sector, which is the sector that will ultimately put in place climate action.

Thus, the creation of a regime including bottom-up clubs, coalitions or opt-in arrangements must include top-down clear and definite long-term signals for all national and subnational entities regarding the ultimate aim of the Convention, as all arrangements will ultimately be compiled under the international monitoring, reporting and verification and accounting regime.

future must be low carbon and that their collective action will reward countries embracing this new reality, they might generate shared norms showcasing that all are expected to contribute to the regime, while reducing the collective costs of monitoring and enforcing these rules, making free-riding less likely to be tolerated, and the regime easier to operate. If successful, and as these norms become entrenched, it will become increasingly more costly for rogue states not to move to a low-carbon development pathway

Sequencing Capacity-Building and Action

An additional collective action facilitator within the variable geometry regime is the development of country enabling environments for attracting public and private investment into climate action projects, and how developing this enabling environment sequences with execution, to yield powerful ratcheting incentives without escalating resources.

An enabling environment for progressive and advanced climate action projects requires host-country action and capacity-building—at private, public, institutional and subnational levels—as well as policy-preparation tasks, all in advance of implementation phases. The implementation phases, in turn, will create an even more sophisticated enabling environment for further or deeper climate action strategies. Although there are obvious benefits to the creation of an enabling environment for climate action projects, or low-carbon development as a whole, this has been viewed as a developing-country challenge. Actually, the creation of this environment is a collective challenge, that is in the interest of developed countries as well. Moreover, the realization of low-carbon development enabling environments is likely to result in first-mover advantages for proactive countries (both developing and developed) because the countries with the most advanced enabling environments would naturally receive and multiply capital flows more efficiently. It is in the realization of these environments that private capital flows will be most easily leveraged.

Thus, it is a direct benefit to both developed and developing countries that enabling environments in developing countries progress—this is clear ground for express collaboration for mutual gain.

Enabling environments would include advances in elements of MRV, accounting, markets, institutions and sectoral engagement, including the engagement of complex and important economic sectors such as tourism. These advances naturally work in coordination with the formalization and reinforcement of the multilateral rules on accounting, and introduce broad avenues for innovation and cooperative collaboration in a collective low-carbon development effort, anchored in science, perhaps with an element of gap analysis towards ambitious implementation outcomes. This approach to enhanced enabling environments works hand in hand with the concept of clubs, coalitions and opt-in arrangements because the development of these environments can be seen as precursors to the enablement of the arrangements themselves.

The motivator in this “sequencing” incentive is the promise of augmented capital flows as of 2020, as following from the Copenhagen Accord’s mobilisation of not less than \$100 billion annually as of 2020. The promise of these flows sets the stage for a self-perpetuating ratchet-

ing mechanism around the development of sequential periods of enablement for higher low-carbon development programme flows.

In 2015 countries will inscribe INDCs to be effective as of 2020. The period 2015–20, will be an “enabling” period when conditions would be optimized for subsequent implementation—alongside climate action occurring in this period, of course. An additional collective incentive for the enabling period is the promise of at least \$500 billion in the 2020–25 “implementation” period. In 2020–25 implementation period, there would be a fresh round of contributions inscribed “enabling” for the 2025–30 period, to run concurrently with implementation of the previous period’s contributions.

In essence, the concept is to consider a series of “enabling” periods followed by “implementation” periods, which would continue in parallel and overlapping—all in concert to a curve of capacity and contribution towards ever-increasing low-carbon development on track to the 2°C emissions curve. The actual definitions of contributions can evolve during the “enabling” periods, so a country that may initially be on business-as-usual deviation or intensity targets may decide for political or administrative reasons to switch to sectoral absolute targets, or absolute economy-wide targets.

The benefit of this approach is that ambition, in terms of action programmes or even for preliminary enabling environments, can be ratcheted in accordance with evolving capacities. Developed countries are incentivised to assist other countries in creating the environment to bring in private capital for more ambitious climate action projects. Developed countries also have a vested interest in optimizing these conditions and developing countries would want to attract the best low-carbon investments for implementation periods. As a whole, the system supports the continuous evolution of the regime towards ambitious outcomes and enhanced collaboration towards the aims of the Convention.

Financing and developing country leadership are clear under the Convention. In the “enabling” phases, more support would come from public developed-country sources, and indeed, it may well be palatable for developed countries that this investment in capacity-building, and insti-

tutional capacity-building, happen up front, as it would facilitate broader access to implementation resources during the “implementation” phases. Given a credible and valid enabling environment, supported by both developed countries and intergovernmental organizations, and by the host countries, overall investments towards climate action projects well beyond the \$500 billion would be achieved in each five-year “implementation” phase.

For example, Mexico’s climate change legislation and its changes since the Cancún COP 16 meeting, show clear efforts to develop demand for low-carbon development investments throughout its economy. If we could couple express capacity-building and technology facilitation support to this effort, it is entirely feasible for Mexico to emerge as one of the principal recipients of climate action support in the 2020–25 period. Mexico could become a leader in moving through a position of collaboration in the creation of broad and deep enabling conditions, to a situation of taking advantage of investments in social and infrastructure development in a 2°C development pathway.

Even countries with an ambitious contribution (e.g., Costa Rica) could maintain first-mover benefits, as they would be better placed to attract investment, technology and capacity and to develop further competitive advantages. For other countries, tying this approach to a long-term 2°C warming goal/target signals to the private sector that it is ready to engage in sustainable development and low-carbon development with efficient and effective international, domestic and private support.

The collective furtherance of an enabling regime in developing countries towards a below 2°C emission pathway not only saves all countries from crushing future impact and adaptation costs, but also lowers barriers to low-carbon resilience in developing countries, which would then lower incentives for carbon-leakage, trade distortions and gaming of the regime. The best defence against the need for exemptions, which may delay movement to a below 2°C low-carbon resilience pathway, is for development alternatives that are resilient and low-carbon to be available and functional in the fight against poverty in the developing world, all within a sustainable development matrix.

CONCLUSIONS

Effective collective action is clearly essential for a self-determined regime to achieve the ultimate objective of the Convention, through high-ambition cooperation and substantial action. Major commitments by developed countries and substantial actions by developing countries could result in diminished costs to all, especially the most vulnerable. The reverse is also true: lack of collective action would increase the terrific impact and adaptation costs for a majority of Parties to the Convention.

When considering these outcomes, substantial, though differentiated, mitigation contributions within a high-ambition regime is the best outcome for a majority of UNFCCC Parties, especially where the regime incentivises groups of countries to move beyond a set of minimum requirements for action under the Convention, and supports further action and participation as they advance, because this would accelerate global action against climate impact costs—the highest costs that countries will face in the future and the reason why the Convention was created.

A variable geometry regime can allow Parties that start asymmetrically and use different development pathways to graduate their approaches to sustainable development within their evolving respective capabilities, allowing inclusiveness and innovation in the collective efforts under the regime, and highlighting cooperation opportunities and enhanced capacity for those willing to act early to mitigate emissions and reduce climate-change impacts, while enhancing adaptation to the impacts already taking place. Without prejudice to the responsibilities embodied in any principle of the Convention, leadership and action towards sustainable development can be seen side by side with incentives and initiative for bold action by all Parties, regardless of where this leadership emerges.

Self-selecting, variable geometry arrangements can also be understood as “opt-in” or “club” arrangements, organized to embrace the regime rules, forestall free-riding and “backsliding” (which poisons political support for collective climate action), and incorporate the diverse starting points of countries around the world with a view to aligning them through incentives and prosperity to an ultimate 2°C emissions pathway. This long-term signal, and convergence on that evolving emissions curve, is absolutely essential for all countries and the collective climate action regime.

A variable geometry climate change regime, with lasting and self-reinforcing components, would deliver material benefits to participants, including mitigation of crushing future climate impact costs, access to enhanced carbon markets, and food, energy and water resilience. Moreover, the regime would deliver further benefits, including ad-hoc innovation and technological cooperation and broader opportunities on international financial flows, alongside new economic opportunities in low-carbon development pathways.

In the current climate negotiations, we find seeds for powerful incentives to move through self-reinforcing arrangements to escalating climate action. If we understand that capacity-building and planning are natural precursors to the efficient investment of resources required for global low-carbon development for a 2°C emissions pathway, then we can understand that the seeds for ever-increasing climate action are within our grasp—and there is evidence that countries are already moving accordingly.

Current thinking on “enabling environments” has thrown the weight of the issue to developing countries. A broader, more collaborative view on the creation of enabling environments reveals a different sequence of opportunities and actions. More resources would naturally flow to the most enabled countries, and developed countries would hold a stake in assisting in the iterative creation of these enabling environments in as broad a group of developing countries as possible.

These incentive arrangements would naturally include disincentives for countries to lag, as—irrespective of their nationally determined contributions under the Durban Platform— countries not moving forward with an enabling environment would receive less attention from the \$500 billion+ quinquennial fund mobilization pledge by developed countries.

In all cases, the regime must give priority to facilitative arrangements while still considering the option of sanctions. Conditions to underpin this cooperation would be enhanced by the following:

- An MRV regime that allows for existing market and cooperation instruments to expand and operate with environmental integrity side by side with domestic emission mitigation contributions by developed and

developing countries, without preventing further development of carbon markets amongst those interested in advancing them.

- Expanding in sequence other sources of finance if emissions markets are not used, and exploring how combinations of mitigation and adaptation finance could prioritize more action by those capable of doing it, while supporting vulnerable countries.
- Exploiting mitigation and adaptation synergies so that the capacity of integrated policies and public and private support for those initiatives can be received by all, especially those more vulnerable.
- Clear and unequivocal signals of the shape of the new regime, to both the international public sector and the private sector, ensuring a direction of travel and “no backsliding.”

Altogether, the incentive structure must converge on global climate action, with ultimately complete convergence on net absolute emissions levels, all on the below 2°C global emissions curve. The challenge will be in allowing meaningful commitments from diverse starting points, but with strengthening incentives, opportunities and benefits to more concrete, nonexclusive measures, which will allow the required ultimate convergence on net absolute emissions.

Perhaps the most important aspect of this proposal is that, in terms of political messaging, the capacity of a variable geometry regime to engage with selective subnational and regional initiatives also provides space for regional and domestic environmental and sustainable development priorities and tailored programs for regional, national or subnational action to directly support the required international climate action. This provides new ground for a new, positive political narrative to multilateral climate change action, where international action stands side by side with responses to the demand from communities for broader, collective benefits that the Convention espouses. Action by communities in support of the environment that they love aligns to the global collective action required to address climate change. At the end of the day, this might be the most powerful incentive of all.

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ENDNOTES

1. Refer to "free-riding" as the nonparticipatory behaviour by a member of a group towards the preservation of a public good, such as the atmosphere. Thus, if other group members do contribute, the nonparticipating member derives the benefits from the public good without contributing to its preservation or maintenance, thus getting a "free ride."
2. A summary of collective action theory and its fundamental developments can be found in Sandler 1992.
3. See the report of the 13th meeting of the Cartagena Dialogue at <http://climate-iiisd.org/events/13th-meeting-of-the-cartagena-dialogue-for-progressive-action/>.
4. See International partnership on Mitigation and MRV at <http://mitigationpartnership.net/>.
5. See the group establishment of AILAC at <http://www.brookings.edu/blogs/up-front/posts/2012/12/12-latin-america-climate-roberts>.
6. See the Acting Together for Bold Outcomes Project (ATBO) at <http://cdkn.org/project/acting-together-for-bold-outcomes-phase-2/>.
7. Note the more proactive positions taken by the countries now organized as the Independent Alliance of Latin America and the Caribbean, the progressive stance of the LDC Group, and engagement by developing countries within the Cartagena Dialogue for Progressive Action—a grouping encompassing both developed and developing countries.
8. Consider the results from the New Climate Economy research at <http://newclimateeconomy.net/>.
9. See DARA 2nd Climate Vulnerability Monitor 2012 at <http://daraint.org/climate-vulnerability-monitor/climate-vulnerability-monitor-2012/> and IPCC (2014b) p. 17, Figure SPM 6.
10. IPCC (2014c) p. 50, Table TS.3.
11. See Abeysinghe and Arias (2013) for the treatment of the CBRD principle.

ACT 2015 Working Paper

This ACT 2015 paper is part of a series on elements of the 2015 climate agreement. It should be read in conjunction with the papers on adaptation and loss and damage; an ambition mechanism; characteristics of commitments; equity; finance; legal form; measurement, reporting, verification (MRV) and accounting, and options for a compliance mechanism; Transparency and Accountability (MRV).



ABOUT THE INSTITUTION

Energieia is a research and advisory network formed by ex-negotiators in climate change with coverage in Latin America and Asia, and nascent in Africa. It has developed the Economics of Boldness as a methodology for the analysis of negotiation options for developing countries, instruments to support net reduction contributions by developing countries, and networks to exchange ideas around them in its regional and national network. Energieia has also provided negotiation supports to several Latin American and South East Asia countries, as well as the European Union and Group of 8 on the formation of the Cartagena Dialogue in 2009 and the activities under the United Nations Framework Convention on Climate Change, the Progressive Latin America Coalition and the Latin American workshop to expand the scale of the response.

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ABOUT ACT 2015

The Agreement on Climate Transformation 2015 (ACT 2015) consortium is a group of the world's top climate experts from developing and developed countries that have come together to catalyze discussion and build momentum toward reaching a global climate agreement at the forthcoming UN Framework Convention on Climate Change (UNFCCC) summit in 2015.

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