

The Global Governance of Climate Change

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Subject: Can the Paris COP in December 2015 deliver on its promise?

Significance: With just four months until the 21st gathering of the Conference of the Parties (COP 21) kicks off in Paris, this GGI policy brief takes stock of what is likely to be the global governance challenge of the century. As the deadline fast approaches, we are witnessing a flurry of climate activity. The G7 recently called for decarbonisation by the end of the century, pledging to cut greenhouse gas emissions by 40-70 per cent by 2050; Pope Francis has issued an encyclical making the Catholic case for urgent action on climate change; six major European oil and gas companies have - pragmatically - called for a carbon tax; and a court in the Netherlands has ordered the Dutch government to more aggressively cut its emissions over the next five years. All this points, some say, to a surge in support for climate action and an irrepressible momentum that will culminate in a historic deal in Paris. And historic it may well be, but will it be enough? And if it is not, how else might we solve the problem of anthropogenic global warming? This policy brief breaks down the science and politics of this complex global challenge to address these questions.

ANALYSIS

Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report in late 2014: we now know "beyond doubt" that human activity is the primary cause of global warming. Specifically, the authors state, "it is extremely likely [95-100%] more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forcings together". The report states that emissions 'management' is no longer sufficient to stabilise the climate and that full decarbonisation is necessary in order to avoid the notorious 2°C temperature rise above pre-industrial levels - the internationallyagreed threshold to avoid the most dangerous effects of global warming.

We need to act fast: global emissions must peak by 2020 and fall sharply thereafter to 50% of peak levels by 2040. While the average global temperature currently stands at 0.8°C above the pre-industrial level, climate experts at the Global Apollo Programme have shown that if the current trend in Co2 emissions continues, by 2035 a 2°C increase is "highly probable", and a 4°C would become inevitable if policies were not adjusted. They point to the relentless rise in the levels of Co2 in the atmosphere, "from 270 ppm (parts per million) in the pre-industrial world to 400 ppm now [...] it is now rising at over 2 ppm each year", and calculate that, in order to avoid breaching the 2°C ceiling, we must stop this rise at 450 ppm, requiring a radical and immediate reduction in the net flow of Co2 into the atmosphere. This is further complicated by the fact that, according to the International Energy Agency, over the next two decades, world population will grow by 25% and income per capita will more than double, leading total energy demand to rise by 33%.1

What happens if we fail? If emissions are not substantially reduced, we will see an increase in the frequency and severity of extreme weather events (droughts, floods, heat waves, storms, etc.), the melting of permafrost, dangerous sea-level-rise, altered

¹ IEA (2013)



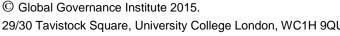
precipitation patterns, ocean acidification, etc. These are predicted to lead to secondary effects such as slowed economic growth, food supply shocks, hunger, poverty traps, mass migration, and violent conflict. The picture is bleaker still if we consider that standard climate change models deal only with the 'known knowns', while ignoring the potential consequences of extreme events known as 'tail events' or 'black swans' which, while improbable, could "dwarf the standard impacts described in the IPCC reports". With the gravity of the situation established, we will now turn our attention to the international political efforts that have, over the last three decades, attempted to solve this singular global challenge.

Context: In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was established at Rio de Janeiro. The agreement binds governments to take action on climate change without stipulating what exactly must be done. During these talks and over the following years of negotiations, governments wrestled with the thorny issue of 'common but differentiated responsibility', a principle which holds that developed states due to their greater capacity to react and their historical emissions2 - should bear more of the responsibility than developing countries in the effort to avoid dangerous climate change. While this is a commendable principle and a necessary foundation to any climate agreement, an excessive focus in negotiations on who should pay what has unhelpfully framed climate change mitigation and adaptation, almost entirely, as a matter of winners and losers. This zero-sum game mentality has frozen UN climate talks and led to a dangerous postponement of significant action.

In 1997 the Kyoto Protocol was signed requiring a global emissions reduction of approximately 5% by 2012 compared to 1990 levels. In line with the principle of differentiated responsibility, developed countries were assigned emissions reduction targets, while developing countries, including emerging economies such as China and Mexico, were not required to cut emissions at all. With US Congress opposition to the deal, the largest global emitter refused to participate, and the treaty could not enter into force until 2004 when Russia – under pressure from the EU – ratified the agreement. By then, however, the initial target was no longer feasible. While the Kyoto Protocol was extended until 2020, the US has again refused to ratify the agreement, Canada has pulled out, and Japan, New Zealand and Russia have refused to accept new targets for the 2012-2020 period. The 'Kyoto approach' has come under further strain as three of the world's four largest polluters (China, the US, and India) have expressed their opposition to a legally binding emissions target.

The failure of the Kyoto Protocol, in part, explains why this year's talks in Paris are likely to take a looser, more bottom-up approach which countries can more easily sign up to. The 'pledge and review' approach, established at Warsaw in 2013, requires that governments publish their intended climate actions - formally known as Intended Nationally Determined Contributions - well in advance of a major summit, allowing sufficient time for other states and civil society organisations to assess the rigour, transparency and ambition of commitments, and gauge the aggregate impact of all contributions. Some supporters of a review mechanism also call for the inclusion of a ratcheting-up system whereby countries' pledges can be revised up on a cyclical basis, in line with discoveries in climate science and evolving technologies. This is, however, likely to be another controversial issue during

² According to the World Energy Outlook of 2009 (pp. 179–180), the US has been responsible for 28%, and the EU 23%, of global cumulative emissions between 1890 and 2007.



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negotiations, as China and India have expressed their concern with the idea of an external review system.

A look at the negotiating text for the summit in Paris: suggests that we are now running the risk of having a universally endorsed treaty which, nonetheless, is wholly inadequate for dealing with the extent of the challenges we face. As Pablo Solón has pointed out, no state has proposed to keep fossil fuels underground even though the science tells us that 80% of known coal reserves, half of all gas reserves, and a third of all oil reserves must not be burned in order to avoid exceeding the 2°C threshold. The text also almost entirely neglects the issue of short-term targets, focussing instead on goals for 2050 or 2100. However, as explained above, if we do not see significant cuts in emissions in the next decade, the world will be on course to significantly surpass a temperature rise of 2°C. A tacit agreement seems to have arisen whereby countries will be allowed to do as they wish until 2030. Those countries that support ambitious action seem to be more concerned with avoiding the failures of Kyoto and ensuring that this agreement is universally applicable than pressuring states to agree to immediate action.

Unfortunately, the negotiations preceding Paris show no signs of overcoming the perennial 'common but differentiated responsibilities' problem. This debate will be the centrepiece of negotiations in Paris and promises to yet again draw attention away from the main issues, and water down the responsibility of the major polluters to reduce their emissions. Indeed, the US-China deal struck last year indicates that the world's largest polluters have agreed not to take any serious action until at least 2030. The North-South question is also likely to dominate the other key issue to be discussed at Paris, namely finance. At the Copenhagen talks of 2009, developed countries agreed to provide \$100bn per year by 2020 to developing states to assist them in adapting to the impacts of climate change (e.g. climate-proof infrastructure, climate-resilient crops, etc.) and investing in green technology to reduce their emissions. India and China have recently called on developed states to honour that pledge. However, the negotiating text suggests that this will be a highly contentious issue and a significant obstacle to an agreement. While developing countries want the finance to come from developed states' public spending, the latter are pushing for private funding and a role for international organisations such as the World Bank. Furthermore, they argue that this obligation should extend beyond developed countries to include all countries capable of providing funding.

What can we expect from Paris? The major emitters have already made their pledges, giving us an indication of the extent of ambition that will be brought to the negotiating table. The US has agreed to reduce its emissions by 26-28% by 2025 compared to 2005 levels, China has said its emissions will peak by 2030, and the EU has committed to cutting emissions by 40% by 2030 compared to 1990 levels. India has so far failed to produce a target, and it has recently noted that any decision regarding its pledge will take into account its "development and growth requirements". As Nicholas Stern has commented, these pledges "will not be enough to prevent the Earth's temperature from rising beyond the level scientists consider the tipping point to devastating environmental disruption". For instance, even if we take the most optimistic interpretation of the pledges made by all governments to date, we are expected to cross the decisive 450 ppm threshold by 2035. However there is still hope, the professor argues, if a review mechanism can be included in the deal, thereby enabling countries to scale up their ambition periodically. However, as mentioned above, this





is a highly divisive issue and the inclusion of a robust and effective mechanism is far from certain.

In sum, since the failure of the Copenhagen summit, the UN has moved from the hard law approach of Kyoto and its characteristic binding targets and timetables to a soft law approach characterised by the bottom-up 'pledge and review' system which relies on commitments and monitoring, and is driven, it is hoped, by a process of persuasion and imitation. This approach, seen as more flexible and customised, is preferred by some because of its inclusiveness. And indeed, the approach has succeeded in getting many developing countries to outline INDCs and make formal pledges in the run up to Paris. But, as Robert Keohane argues, if this approach is to be anything but 'organised hypocrisy', it will require a serious monitoring instrument. Absent this, he claims, the pledges – as they stand, totally insufficient for avoiding dangerous climate change – will mean nothing at all. Others are more critical still, arguing that the 'bottom-up' approach makes us lose sight of the enormity of the challenge and will inevitably lead to a woefully inadequate collective response. The Bolivian diplomat, Pablo Solón, denounces the approach, remarking that "This illogic boils down to every country saying what it is able to do, and let's see what happens later".

Therefore, while the science is becoming ever more compelling and the solution ever more technologically feasible, so far no serious steps have been taken to mitigate climate change. The following section explores the political economy of climate change to try to understand why multilateral diplomacy has consistently produced suboptimal results.

The ultimate 'Tragedy of the Commons': The politics of climate change is, fundamentally, the ultimate 'Tragedy of the Commons'. The nature of climate change is such that local actions impact the climate, which in turn has significant socioeconomic consequences in other parts of the world. In economic terms, climate change involves substantial 'negative externalities' in the form of transnational spillover effects. Cooperation is complicated by the usual challenge associated with global public goods, namely the free-rider problem; national governments have a strong incentive to benefit from the emissions reductions of other states without contributing to the global effort.

This free-rider problem is exacerbated by the temporal disconnect between the required action and its intended result. In other words, collective action requires that the present generation take costly measures to benefit future generations. Thus, most policymakers, when calculating the costs and benefits of mitigation, will inevitably come to the conclusion that, while climate action can be very politically costly, those who will benefit from it are mostly either foreign citizens or future generations, neither of whom can vote. Cooperation is also hamstrung by the uncertainty of climate science. States would be much more willing to cooperate if the tipping point leading to irreversible and catastrophic climate change were known. But in the absence of absolute certainty, free riding is judged to be in the national interest.

UNDERSTANDING AND OVERCOMING COORDINATION PROBLEMS

Institute a uniform price per unit of Co2: Economic consensus has been shifting in favour of national carbon taxes and we have seen initiatives emerge in numerous countries and regions. One difficulty in this regard would be to establish an appropriate and politically acceptable carbon price. On the one hand the precise monetary value of the damage caused by carbon emissions is far from certain, and, more complicated still, finding a target





that would be acceptable to both developed countries and developing ones seems unrealistic at this point.

Explaining variation in national action on climate change: Of course, national climate policies exhibit significant variation, and not every state behaves in predictably rational ways. In order to understand why some countries take significant action on climate change while others do not, the political economy literature suggests at least four important variables. Using Putnam's (1988) two-level game metaphor, it distinguishes between an upper (international) level and a lower (domestic) level of analysis. At the international level, states are subjected to different pressures depending on their size and wealth, and are usually conditioned by the particular regional, economic or political bloc they belong to. At the domestic level they identify three significant variables. Firstly, they note that the structure of a state's government is important; generally, the more veto players there are, the more difficult it seems to be to change policy. Secondly, they point to the degree of political accountability; the more responsive a government is (as determined by the degree of press freedom, electoral rules, etc.) the more politicians must take citizens' views seriously. Finally, they point to the role of interest groups. As scholars such as Olson (1965) have noted, policy outcomes tend to reflect pressures from competing interest groups. Those who have the ability to organise and mobilise around a given issue will be better placed to influence policy.

Reasons why some countries are more ambitious than others: countries where fossil fuels play a central role in the economy are likely to see active political mobilisation – by industry representatives but also by citizens whose livelihoods depend on the existing economic system – against any ambitious international commitments to reduce emissions. While low-carbon industries have an interest in counteracting these efforts, they tend to be less politically influential than the established industries and will not replace these soon enough to avoid dangerous climate change. Of course, these interests can be balanced by other actors such as environmental NGOs, but in many countries their role is marginal and their influence over policy negligible.

Does political regime type matter? In nondemocratic states, in particular, interest groups often enjoy direct influence over policy, with little or no public mediation. Moreover, certain aspects of democracy such as freedom of speech and freedom of the press allow for higher levels of public awareness of climate change, which, according to a study by the EBRD, is a powerful determinant of climate change policy adoption. However, the authors also find that the level of democracy in itself is not a significant factor. We should not assume, therefore, that weak democracies and nondemocratic states are incapable of ambitious climate action. Indeed, stable nondemocratic states sometimes have an advantage over democracies in that the time horizon of leaders is longer and they can therefore more easily balance the short-term costs and long-term benefits of climate change mitigation. The study finds that, regardless of the level of democracy or the administrative capacity of the state, the influence of carbon-intensive industries is difficult to overcome and will probably require altering the incentives of these and other domestic actors to create support for low-carbon production.

Contested multilateralism: The deadlock of multilateral climate change diplomacy has given rise to a host of alternative governance regimes, some of which interact with the UN system and others which function independently of it. This phenomenon is by no means unique to climate change governance; indeed it has been <u>identified</u> by Keohane as a pervasive feature of today's fragmented international political system. From global health governance to counterterrorism to trade, we are seeing multilateral bodies, states, and non-





state actors forming coalitions that challenge the practices and purposes of existing multilateral institutions. Keohane welcomes this development as a way of bringing new ideas, energy, and bottom-up momentum to climate change governance. In his words, the evident failure of the UN system urges us to "think outside the UNFCCC box". Most urgent, he argues, is the need to overcome the free-rider problem by reframing states' national interests.

Reframing the issue: Keohane argues that the most effective way to reframe states' national interests would be a global market mechanism such as a 'cap and trade regime'. However, the prospects of establishing a global emissions trading scheme look poor for the time being. Therefore, he notes, we must look at states' domestic politics. For success at the multilateral level, we need general mobilisation in favour of ambitious climate policies in democracies worldwide. However, citizens, just like governments at the international level, tend to act as free-riders given that the fruits - in terms of emissions reduction - of their environmentally-friendly behaviour are negligible and the benefits are broadly distributed among complete strangers. Under these circumstances, a rational individual will choose to benefit from the conscientious activity of others while making no personal sacrifices for the common good. However, if a government were to introduce a law to tax carbon-emitting industries and redistribute the money in the form of tax rebates to all citizens, it could exert downwards pressure on (fossil fuel) energy demand, flipping the interests of the average voter who is now a net beneficiary of increasing the price of energy. This would also have the advantage, Keohane argues, of locking in these changes, making them difficult to reverse.

Keohane also raises the idea of reframing the issue to overcome the temporal problem identified above which exacerbates free-riding tendencies. He proposes issuing long-term bonds to finance R&D for low-carbon technology so that the beneficiaries of climate action, namely future generations, would bear the costs of mitigation.

Carrots and sticks: Another recent proposal which has gained significant support from climate change experts is William Nordhaus's idea of creating a 'Climate Club'. According to Nordhaus, the free-riding tendency is *the* obstacle to significant climate change mitigation. He argues that this challenge can be overcome by creating a voluntary group of states which agree to undertake harmonised emissions cuts (using a uniform carbon price) and penalise non-members through uniform tariffs on imports into the club. This would create a strategic context in which countries acting in their self-interest would choose to enter the club. From a political economy perspective, as outlined above, this would have the advantage of shifting the interests of the median voter and, importantly, of major economic interests. For instance, we would predict that exporters at risk of losing competitiveness would mobilise to pressure the government to enter the club, thereby challenging the predominance of carbon-intensive industries in many polities. Supporters of this proposal argue that climate diplomacy is not producing the necessary results and, as with other successful regimes such as the Montreal Protocol, some kind of enforcement mechanism is essential to future progress.

Of course, there are a number of unresolved questions about this proposal. Firstly, there would probably need to be some kind of amendment made to WTO rules in order to prevent non-members from retaliating with tariffs of their own. Secondly, the mechanism is likely to work with a carbon price of approximately \$50 a ton, but it is questionable whether it could continue to function if that price were scaled up. Thirdly, Nordhaus points to the effectiveness of clubs in the field of finance and trade governance. It is noteworthy,





however, that many of these clubs were created in the post-war era. Will it be more difficult to reach a critical mass of support for such a proposal in today's multipolar world?

Finally, there is the question of how to deal with developing states which are not members. Many countries depend overwhelmingly on carbon-based energy for powering remote villages and critical infrastructure. Coercion without support would be unfair and, in any case, insufficient for getting these countries to reduce emissions. However, the question, in the end, is whether we have a better alternative. Nordhaus recognises that his proposal is highly idealised, but he argues that it is an essential step to halting warming. "Consider the alternatives: reviving the feeble Kyoto Protocol; weak national plans that achieve minimal reductions; geo-engineering that runs unknown risks of dangerous side effects; or doing nothing at all and incurring unchecked warming with all its [...] perils".

Research & Development: the best solution to the free-rider problem is to make it disappear altogether; there would be no need to reframe the issue if technological innovation created a context in which emissions reduction was undeniably in countries and individuals' best interest, both short- and long-term. However, while significant progress has been made, this is still a rather remote prospect in the foreseeable future. Although renewables excluding large hydropower projects - make up almost 10 per cent of global power generation, in most cases they are only economical because of government subsidies. Because these subsidies – as witnessed in Spain – are always at risk of being withdrawn, long-term progress depends on technological innovation (e.g. batteries, fuel pumps, etc.) driving costs down. Indeed, prices are falling rapidly – particularly in solar – [should this dash be relaced by 'energy'?], and, on current trends, renewables will make up a fifth of global power generation by 2030, but if they are to significantly slow global warming, we will need to see huge technological breakthroughs in the next decade - renewables will need to be cheaper than fossil fuels by 2025 to avoid a 2°C temperature rise. This is unlikely to happen given the meagre share of both public and private R&D expenditure currently dedicated to renewable energy.

A group of scientists and economists have recently announced plans to create an international institution known as the <u>Global Apollo Programme</u> to "develop renewable energy supplies that are cheaper than those from fossil fuels". The focus of the institution would be on solar and wind energy which are already competitive in some regions, but are hampered by their intermittency (power cannot be stored and supplied when and where it is needed). This initiative, which is intended to start functioning in November 2015, would require member states to commit 0.02% of GDP to research into renewables. The initial target would be \$15 billion in public spending worldwide (the figure currently stands at \$6 billion). From a cost-benefit perspective, this project is perhaps the most promising international initiative yet proposed; at a relatively minor cost to governments, it has the potential to play a major and rapid role in managing the risks of climate change.

Polycentric governance: contested multilateralism is not confined to state initiatives. Indeed, the real revolution in the landscape of climate change governance is occurring outside of the interstate system. Climate change is an issue which entails diverse costs and benefits for a range of actors at different levels and in different spaces. Institutional diversity is the new norm as public, private, and hybrid initiatives cooperate in bottom-up as well as top-down processes with an array of approaches but the common goal of limiting climate change.





The UNFCCC has embraced many of these efforts which it calls International Cooperative Initiatives (ICI): governance arrangements comprising businesses, cities, regions, and investors, often in cooperation with states within fields such as emissions reduction, finance, and renewable energy.

Another example of a subnational initiative is the recently established Carbon Neutral Cities Alliance which describes itself as a "collaboration of international cities committed to achieving aggressive long-term carbon reduction goals". The 17 member-cities are from Europe, North America, Australia and Japan and their goal is to reduce greenhouse gas emissions by at least 80 per cent by 2050 or sooner. In another initiative of international cities, Copenhagen, Frankfurt, Munich, Seattle, and Sydney have pledged to switch to using only clean energy by 2050. We are witnessing similar efforts at the level of regions, with partnerships such as the Western Climate Initiative, a group of US states and Canadian provinces which uses market-based solutions to cut emissions.

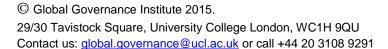
Just under 700 companies have made commitments under the ICI framework. An interesting example is the RE100 initiative which aims to get "at least 100 companies to make a global 100% renewable commitment with a clear timeframe for reaching their goal". Members include IKEA, H&M, Unilever, M&S, and Nestlé. At the same time, 180 investors have signed up to the ICI. For example, Barclays has committed to reduce emissions across its value chain by 10% from 2012 to 2015 through increased energy efficiency and solar power installations.

While proponents argue that these alternative governance arrangements can act as important bridging devices and fill in the gaps left at the multilateral level – for instance by taking action in the crucial but largely neglected period up to 2020, others note that their voluntary nature, the diversity of their goals and the lack of transparent reporting make it difficult to assess their contribution to reducing global warming.

Judicial governance: As explained above, one of the key challenges that the multilateral approach to climate change faces is, firstly, creating legally binding commitments and, secondly, making these enforceable. The latter is particularly difficult; indeed, governments have been legally committed to preventing dangerous climate change since the UNFCCC treaty was negotiated over 20 years ago, but translating this norm into concrete legal commitments for individual countries has proved elusive. However, an interesting example of 'contested multilateralism' is taking place in the courts of a number of countries which promises to revolutionise climate change action by replacing the top-down political process with a bottom-up judicial approach. This novel approach is, in part, inspired by the book *Revolution Justified*, by lawyer Roger Cox, which encourages the legal community to become engaged in the fight against climate change in the absence of an adequate political response.

While climate change and the enjoyment of human rights are intimately linked, international negotiations have consistently skirted around this fact, with the UNFCCC only recently recognising that climate change is "one of the greatest human rights challenges of our times". While multilateral talks have made some progress on this issue in recent years – e.g. the Cancún conference of 2010 and the recent Geneva Pledge for Human Rights in Climate Action, far too few governments have shown willingness to discuss the implications of climate change for the enjoyment of human rights at UNFCCC gatherings.

³ Pegram, J., 'Who will ensure climate change deal protects children?', UNICEF, 29 June 2015.





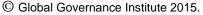


The legal realm has followed the international political sphere in recognising that a 2°C increase in average global temperatures would pose a global threat to individuals' enjoyment of their human rights. As the Court of Justice of the European Union has recently noted, "climate policy is also designed to protect the health and life of humans". This principle has recently been concretised in a landmark ruling by a Dutch court which deemed the government's climate action unlawfully inadequate and ordered the executive to take measures to reduce its emissions by at least 25% over the next five years. While the ruling will probably be appealed by the executive later this year, this is the first time that a court has legally required a state to take precautions against climate change and it promises to set an important precedent for other national courts. The case is also unprecedented in that it draws, inter alia, on human rights law to protect citizens from the consequences of dangerous climate change. Similar cases are now being prepared in a number of countries including Belgium, The Philippines and Norway.⁴

Perhaps most importantly, this new judicial approach may hold the answer to the free-rider problem. In March of this year, a group of international lawyers established the Oslo Principles on Global Climate Change Obligations which provide legal foundations for the argument that "governments are violating their legal duties if they each act in a way that, collectively, is known to lead to grave harms". The US Supreme Court has noted that "a reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere". In the above-mentioned case, the Dutch court made the same argument when it ruled that "The State cannot hide behind the argument that the solution of the global climate problem is not just dependent on Dutch efforts. Every reduction in emissions contributes to the prevention of dangerous climate change. As an industrialized nation, the Netherlands should be a frontrunner in this respect. This enlightened approach, if acted upon, promises to break the narrow-minded free-rider logic that has dominated the global response to climate change to date and create bottom-up legal obligations that go further than the weak international commitments agreed to on the multilateral stage.

CONCLUSION: climate change governance is in a state of flux; the multilateral architecture that has dominated for the last two decades is gradually being replaced by a more fragmented and decentralised regime composed of less clear-cut institutions. The top-down, treaty approach has been infused with a bottom-up logic of voluntary pledges, and now shares the stage with a diverse range of characters such as bilateral agreements, subnational and non-state initiatives, and national courts. The intergovernmental system has repeatedly failed to take the necessary action to protect humanity from the effects of dangerous climate change. The negotiations in Paris this winter seem unlikely to break this pattern, failing to address some of the key issues and once again kicking the can of meaningful emissions reduction firmly down the road. It is therefore unsurprising that many climate experts are now pinning their hopes on developments outside the multilateral regime, be they in the fields of technological development, CSR, regulation, or domestic law.

⁶ Enserink, M., 'In surprise, Dutch court orders government to do more to fight climate change', *Science Magazine*, 24 June 2015.



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⁴ Briggs, H., 'Climate change: Is the Dutch court ruling 'a game changer'?', BBC, 24 June 2015.

⁵ Powles, J. and T. Khan, '<u>Climate change: at last a breakthrough to our catastrophic political impasse?</u>' *The Guardian*, 30 March 2015.



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