Offprint from:

Davor Vidas and Peter Johan Schei (eds), *The World Ocean in Globalisation* (Leiden/Boston: Martinus Nijhoff Publishers/Brill, 2011), pp. 165–186.

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The Climate Regime: Achievements and Challenges

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As a scientific issue, climate change has been on the agenda for more than 50 years; it reached the international political agenda more than 20 years ago. Against this background, the goal of this chapter is threefold: to assess what has been achieved; explore main factors that have contributed to this outcome; and briefly discuss future developments. The main components of the climate regime are the 1992 United Nations Framework Convention on Climate Change (UNFCCC),[1] the Kyoto Protocol and the Intergovernmental Panel on Climate Change (IPCC). The Copenhagen Accord of 2009 and the Cancun Agreement of 2010 will also be briefly touched upon. Considering the long time-span, our aim is to trace broad patterns and trends.

From 2005 and until the financial crisis in the autumn of 2008, the environment, and climate change in particular, was at the top of the international political agenda. It had become 'high politics': 'overall there is hardly any high-level political encounter in which the issue is not discussed'.[2] One main reason for the strong surge in interest was probably the perceived, and rather dramatic, visualisation of the problem with stronger and more frequent tropical storms, shrinking glaciers and pictures of polar bears looking for ice. These images were amplified by the stronger and more consensual IPCC reports released in 2007. In addition, the long period of unprecedented economic growth worldwide created fertile ground for dealing with long-term issues like climate change. This was to change with the economic crisis, and put its mark on COP 15 in Copenhagen.

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[1] Text published in UNTS, Vol. 1771, pp. 164ff; reprinted in ILM, Vol. 31, 1992, pp. 849ff.

[2] S. Oberthur and C.R. Kelly, 'EU Leadership in International Climate Policy: Achievements and Challenges', *The International Spectator*, Vol. 43, 2008, p. 35.

In the next section we outline briefly the development of the climate regime. We then present our analytical perspective and thereafter discuss the effectiveness of the regime and point to some main factors that have contributed to its performance. In the final section we discuss possible future developments.

THE DEVELOPMENT OF THE CLIMATE REGIME

The Agenda-setting Phase

Although the influence of increased concentrations of greenhouse gases (GHGs) on the earth's climate was the subject of sporadic scientific interest during the 19th century, it was not until the 1950s that it was embedded within systematic research programmes, not least through the International Geophysical Year 1957–1958. Most research in this early phase was undertaken in the USA. Then, in the 1960s and 1970s, climate research was fostered by several overlapping transnational scientific networks under the aegis of the World Meteorological Organization (WMO) and the International Council of Scientific Unions (ICSU). In the 1970s the policy relevance of climate change was sharpened by the United Nations Environment Programme (UNEP), which pointed to the societal impacts of climate variability. Politically, the USA was also the first to take an interest in the issue, not least as a result of initiatives by Al Gore, then a young Congressman, who arranged the first Congressional hearings on climate change in 1982. Initially, the scientific focus was mostly on the effects of CO_2 emissions on the climate system. At a 1985 expert conference in Villach, Austria, however, it was concluded that climate change might be twice as urgent as originally thought because of the additional warming influence of other GHGs. The final milestone in the agenda-setting phase was the Toronto World Conference on the Changing Atmosphere in 1988. By this time, the green NGOs had entered the scene with full force, further sharpening the findings by the scientific community. The Toronto Conference proved to be forceful combination of activist scientists, activist politicians and green NGOs. The Conference coincided with an unusually hot summer in the USA, and NASA scientist James Hansen had made headlines with his statements in Congress that he was 99 per cent certain that the high summer temperatures were indicative of real warming trends. This set the stage for a political atmosphere charged with high ambitions, and the Toronto Conference called for the industrialised countries to cut their CO_2 emissions by 20 per cent by 2005. That was an overly optimistic target, and reflected inadequate understanding of the complexities and difficulties involved. The Toronto Conference was

nevertheless very important in terms of how to approach the issue of climate change.[3]

The Process of Negotiations

A key decision taken shortly after the Toronto Conference with significant implications for the formation of the climate regime was the establishment of the IPCC. The mandate of the Panel was to assess the state of knowledge on science, the impacts of and policy responses to climate change. It was established around a small group of reputed experts, and has since expanded to include hundreds of scientists. The Panel was intergovernmental, introducing a new trend in the process: the entry of governments, who had been virtually absent in the agenda-setting stage. In 1989 the UN General Assembly decided that a Climate Convention should be negotiated under UN auspices. The Climate Convention was signed at the 1992 Rio Summit. A legally non-binding aim of the Convention was for the industrialised states to stabilise their emissions at 1990 levels by the year 2000. The Convention entered into force in 1994. At the First Conference of the Parties to the Climate Convention (COP 1) in 1995, parties adopted the Berlin Mandate, in which they acknowledged the need to strengthen Annex I commitments beyond the year 2000.[4] This was taken a step further through the adoption of the Geneva Declaration at COP 2, in which parties called for quantified legally binding emissions reductions within specified time-frames. At COP 3 in Kyoto in 1997, the Kyoto Protocol was adopted.[5] According to this agreement, average emissions by Annex I parties were to be reduced by some 5 per cent from their 1990 levels within a five-year period from 2008 to 2012. A flexible approach to implementation was adopted with the three market-based mechanisms: joint implementation, emissions trading, and the Clean Development Mechanism (CDM).

It soon became clear that the Protocol was full of 'invisible brackets'. These were taken up at COP 4, where agreement was reached on a two-year action plan to establish more detailed rules. At COP 6 disagreement was still considerable, but at COP 7 in 2001 agreement was finally reached with the adoption of the Marrakech Accords. The Protocol entered into force in February 2005, when countries representing 55 per cent of the GHG emissions of industrialised countries in 1990 had ratified. The first meeting of the

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[3] S. Andresen and S. Agrawala, 'Leaders, Pushers and Laggards in the Making of the Climate Regime', *Global Environmental Change*, Vol. 12, 2002, pp. 41–51.

[4] Annex I parties include industrialised countries that were members of the OECD in 1992, plus countries with economies in transition. See <http://unfccc.int/> for further details.

[5] Protocol to the United Nations Framework Convention on Climate Change; text reprinted in ILM, Vol. 37, 1998, pp.22ff.

parties to the Kyoto Protocol (MOP 1) took place at COP 11 in Montreal in 2005. An informal process was initiated to adopt a follow-up plan to the Protocol after its commitments expired in 2012. At COP 13 in Bali in 2007, agreement was reached on the Bali Roadmap. This implied that, for the first time, all parties accepted formal negotiations on a new agreement following the Kyoto Protocol. Two working groups were established: the Ad Hoc Working Group on Further Commitments for Annex I parties under the Kyoto Protocol, and the Ad Hoc Working Group on Long-term Cooperative Action under the Convention. The latter was more important, since it included Kyoto non-members such as the USA and (at the time) Australia. Negotiations concentrated on four building blocks: mitigation, adaptation, finance and technology. The adoption of an Adaptation Fund was seen as a major achievement of the Bali meeting. However, the COP 15 in Copenhagen in December 2010 failed to produce the comprehensive international climate agreement many had hoped for. After two weeks of chaotic negotiations, the meeting produced the non-binding 'Copenhagen Accord'. While the signatories to the Accord agree in principle 'that deep cuts in global emissions are required according to science … so as to hold the increase in global temperature below 2 degrees Celsius' (Article 2), the Accord does not include common emissions reductions targets for achieving this aim. Instead, the agreement involves a 'pledge-and-review' approach whereby the parties themselves set their own emissions reduction targets. Thus, it commits Annex I parties to implement the 'quantified economy-wide emissions targets for 2020' which they themselves have submitted to the UNFCCC secretariat. Similarly, Non-Annex I parties are committed to implement the submitted 'mitigation actions'. The result is a set of widely diverging emissions-reduction targets and climate policy measures, with implementation to be ensured primarily through domestic legislation.[6] The Copenhagen Accord recognises the crucial importance of reducing emissions from deforestation and forest degradation in developing countries. The parties further agreed that developed countries would raise funds of USD 30 billion from 2010 to 2012, and that the world should raise USD 100 billion per year by 2020 to assist mitigation and adaptation measures in developing countries. These measures were formally adopted into the Convention through the 2010 Cancun Agreement – the first time that all major economies have pledged explicit action under the UN regime since negotiations started some twenty years ago.

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[6] The list of policy actions submitted by the parties may be found at <http://unfccc.int/home/items/5262.php>.

ANALYTICAL PERSPECTIVES

The effectiveness of an international environmental regime is usually measured in terms of the output, outcome and impact of the regime.[7] 'Output' refers to the rules and regulations emanating from the institution involved. Provided that the rules are appropriate for dealing with the problem and that the parties comply with the rules, specific and strict rules have the potential to be more effective than vaguely formulated ones. It is not self-evident that these conditions are satisfied for the climate regime. Here we use the output indicator to assess some of the most important rules and regulations laid down in the UNFCCC and the Kyoto Protocol. While output is primarily a measurement of *potential* effectiveness, 'outcome' refers to actual behavioural change in the desired direction by key target groups as a result of the regime. Outcome, therefore, is a stronger indicator of effectiveness than is output. The methodological challenges associated with assessments of regime outcome, however, are severe. The key difficulty lies in establishing a causal link between the (here: climate) regime and the behaviour of relevant target groups, in a context where factors other than the establishment of the regime often are more important causes of behavioural change. It is beyond the scope of this chapter to examine changes in behaviour of key target groups: instead, we look at the development in national GHG emissions. Finally, 'impact' refers to changes in the state of the environment following from the regime. This is the most important indicator of effectiveness in the sense that it tells us the extent to which the problem that caused the establishment of the regime has been solved or not. Unfortunately, this indicator is fraught with even more severe methodological challenges due to the potential influence of a host of other factors in dealing with such a complex issue as the climate system. Therefore, it must be used with caution.

Compared to more established regimes, the climate regime is quite immature. This applies particularly to the most important part of the regime, the Kyoto Protocol. It came into force in 2005, and parties do have until 2008–2012 to 'deliver' on their most important commitments: the level of GHG emissions. Thus, the observations we present are bound to be preliminary. We have therefore added two 'softer' indicators: the normative and cognitive aspects of the regime.[8] The normative aspect deals with values and the moral principles that are promoted. We are particularly concerned with the norms laid down in relation to the North/South issue. Most research on the effec-

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[7] E. Miles, A. Underdal, S. Andresen, J. Wettestad, J.B. Skjærseth and E.M. Carline, *Environmental Regime Effectiveness: Confronting Theory with Evidence* (Cambridge, MA: MIT Press, 2002).

[8] R.W. Scott, *Institutions and Organisations* (Thousand Oaks: Sage, 2001).

tiveness of international environmental regimes has focused on measuring 'hard' results, with less attention to the legitimacy of the regime in a North/South perspective.[9] Cognitive aspects concern the role of knowledge and science in the development and operation of the regime.

Several approaches have been developed to explain regime effectiveness.[10] Here we use some of the aspects elaborated in Miles et al.[11] Effectiveness is seen as a function of two factors: the nature of the problem, and the problem-solving capacity of the regime. The more politically and intellectually malign a problem is, the lower the effectiveness can be expected to be – and vice versa. This may seem a rather trivial observation, but policy-makers and researchers often forget to control for problem structure. That is, it may be more of an accomplishment to manage to move a very difficult problem slowly in the right direction, than to solve a very 'benign' problem fully. The nature of the problem tends to remain generally stable, although it may of course change – for example, with the introduction of new technology. We will not deal systematically with this indicator here. Suffice it to say that climate change stands out as an incredibly malign problem as it in essence affects every aspect of human life, in contrast to most other environmental problems. With regard to the problem-solving capacity of the regime, the gist of this argument is that some problems are attacked with more political and institutional energy than others. Problem-solving capacity is seen as a function of the distribution of power, leadership performance and the institutional structure of the regime. Power is often analysed in terms of the relation between 'pushers' and 'laggards': the stronger the pushers, the more effective the regime – and the converse. As we have argued elsewhere, the concept of 'leadership' is problematic to use.[12] It is ambiguous, adds little to more traditional approaches to negotiation behaviour, and has a strong normative component. The concept of leadership has flourished in deliberations over a climate regime; the EU has seen it as particularly important to take on the leadership role. However, research provides no conclusive evidence whether the EU deserves this label or not.[13] In this chapter we therefore use the

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[9] A. Najam, 'Developing Countries and Global Environmental Governance: From Contestation to Participation to Engagement', *International Environmental Agreements: Politics. Law and Economics*, Vol. 3, 2005, pp. 303–321.

[10] A. Underdal and O. Young, *Regime Consequences: Methodological Challenges and Research Strategies* (Dordrecht: Kluwer Academic, 2004).

[11] Miles et al., *Environmental Regime Effectiveness*.

[12] T. Skodvin and S. Andresen, 'Leadership Revisited', *Global Environmental Politics*, Vol. 6, 2006, pp. 13–28.

[13] See for example J. Hovi, T. Skodvin and S. Andresen, 'The Persistence of the Kyoto Protocol: Why other Annex 1 Countries Move on Without the United States', *Global Environmental*

more traditional and less normative concept of 'influence'.[14] We assess influence by contrasting the positions and roles of key actors with the ensuing negotiating results, based mostly on secondary sources. Most emphasis is given to the key actors in the process of negotiations through most of this process – the USA and the EU. However, the emerging economies have become increasingly important in recent years. With regard to non-state actors we generally focus on the scientific community; environmental organisations are not included to any significant extent here.[15]

THE EFFECTIVENESS OF THE CLIMATE REGIME

The Climate Convention spells out a fairly strong normative message. The parties commit themselves to the long-term goal of stabilising atmospheric GHG concentrations at a level that 'would prevent dangerous anthropogenic interference with the climate system' (UNFCCC, Article 2). Thus, almost all nations of the world have agreed, in principle, to the goal that the atmospheric concentration of GHGs needs to be stabilised. The word 'dangerous', however, is ambiguous and contested, and we will show later that this norm has had limited practical significance. More important from a North/South legitimacy perspective, the Convention has adopted the principle of 'common but differentiated responsibilities'. This principle has been important in the sense that it has legitimised the South's rejection of taking on emissions commitments. The downside is that all developing countries are lumped together in one category, even if their interests and contributions to the problem vary significantly more than among countries in the North.

The cognitive message is also strong through the solid scientific underpinning provided by the IPCC. Scientists are involved in three Working Groups – on the science of climate change (WGI), on the impacts of climate change (WGII), and on response options to climate change (WGIII) – where they assess the state of knowledge within each respective area. Assessment reports have been published in 1990, 1995, 2001 and 2007. Draft reports are sent on comprehensive hearings for peer review. The reports then go to the Working Group and full Panel plenaries, made up of scientists and decision-

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Politics, Vol. 3, 2003, pp. 1–24; and Oberthür and Kelly, 'EU Leadership in International Climate Policy', pp. 35–50.

[14] M. Betsill and E. Corell (eds), *NGO Diplomacy: The Influence of Nongovernmental Organizations in International Environmental Organizations* (Cambridge, MA: MIT Press, 2008).

[15] See for example L. Gulbrandsen and S. Andresen, 'NGO Influence in the Implementation of the Kyoto Protocol: Compliance, Flexibility Mechanisms and Sinks', *Global Environmental Politics*, Vol. 4, 2004, pp. 54–67; and M. Betsill, 'Environmental NGOs and the Kyoto Protocol Negotiations: 1995–1997', in Betsill and Corell (eds), *NGO Diplomacy*, pp. 43–67.

makers. The reports are usually adopted without much discussion, but the report summaries often require tough negotiations. In other words, the IPCC does not represent a 'pure' scientific process. Its intergovernmental status implies a vulnerability to politicisation, as experienced by the Panel especially during the initial phases of its operation. However, a balance between scientific autonomy and political involvement has gradually been achieved.[16] Initially, the involvement of scientists from the South was weak, reducing the legitimacy of the scientific message, but the representativeness has improved over time. For a long time, climate change was seen as a problem primarily in the North, even if all indications are that the South will be hit the hardest. More recently, climate change has also been recognised as a serious problem in key developing countries like China.

Since 2009, however, the credibility of the IPCC as well as of climate scientists has been challenged. It started with the 'climate-gate' incident, involving the leakage of about a thousand e-mails between researchers at the Climate Research Unit of the University of East Anglia to the Internet. Renowned climate scientists were accused of minimising the influence of views they disagreed with, while failing to document their own arguments. At about the same time, the 2007 IPCC Report's prediction that the Himalayas could lose all their glaciers in twenty years was shown to be unfounded.[17] As a consequence of these incidents, a series of reviews of the substance as well as process regarding the work of IPCC have been conducted. They have all concluded that the main substantive conclusions of the IPCC have been supported, but that the way the process is organised does not live up to requirements for transparency and accountability.[18] All the same, distrust of the IPCC and the economic crisis have led to reduced public interest as well as increased doubt about the seriousness of the problem.[19] However, attention tends to be cyclical, so public opinion may well change again.

The direct political effects of the scientific message on the measures adopted have been modest. Scientists have called for heavy reductions in emissions ever since the early 1990s, but global emissions continue to increase strongly. The indirect effect of the IPCC's work may be seen as more

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[16] T. Skodvin, 'The Intergovernmental Panel on Climate Change', in S. Andresen, T. Skodvin, A. Underdal and J. Wettestad, *Science and Politics in International Environmental Regimes* (Manchester University Press, 2000), pp.146–181.

[17] 'Climate Change Assessment Must Try Harder', *The Economist*, 4 September 2010, pp. 78–79.

[18] Ibid.

[19] See for example BBC Climate Change Polls, February 2010, available at <http://news.bbc.co.uk/nol/shared/bsp/hi/pdfs/05_02_10climatechange.pdf>.

significant, particularly in terms of creating increased understanding of this complex issue.

Turning to output, the Kyoto Protocol is where we find specific provisions. The most important indicator regarding its potential effectiveness is the rules specifying emissions reduction commitments. The average emissions reductions generated by the Kyoto Protocol are some 5 per cent from 1990 levels, but there are considerable differences in the commitments of the Annex I parties. While the EU (as an aggregate) is to reduce emissions by 8 per cent, Australia is allowed to increase its emissions by 8 per cent. This reflects differences in the countries' energy mix and thereby differences in how costly it will be for them to change current emissions trajectories, but there is no precise model or calculation behind the adopted figures. Reductions are to be achieved within a multi-year period, and compliance is assessed on the basis of each country's average emissions during this period (2008 to 2012) of a basket of six GHGs. This allows countries to trade off greater reductions in some gases against lesser reductions in others. The Protocol also allows the Annex I Parties to take into account changes in land use, offsetting emissions by reducing their rate of land clearing or increasing the forest coverage (LULUCF). All these provisions are introduced to make implementation less costly. The emissions reductions targets of the Kyoto Protocol are relatively weak, but should nevertheless be seen as an improvement compared to the very general obligations in the Climate Convention. In a comparative perspective, the Kyoto Protocol is stronger than the Convention on Biological Diversity (CBD), where there are no binding targets or time-tables, but it is exceedingly weak compared to the level of commitments adopted in the ozone regime (the Montreal Protocol and subsequent amendments). Moreover, calculations have shown that even in the (unlikely) case of full compliance by all Annex I countries, the effects in terms of climate mitigation will be marginal.[20] Further weakening the significance of the commitments is the fact that emissions from aviation and shipping are not included. Finally, emissions are increasing much more rapidly in the South compared to emissions in Annex I parties. Given that developing countries are completely exempted from emissions reduction commitments, this serves to further reduce the significance of the Protocol.[21]

The main argument behind the three market-based mechanisms is cost-effectiveness and creating incentives for emissions reductions. These are to be supplemental to domestic emissions reductions, but it is up to the parties

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[20] Hovi, Skodvin and Andresen, 'The Persistence of the Kyoto Protocol', p. 4.

[21] O. Røgeberg, S. Andresen and B. Holtsmark, 'International Climate Treaties: The Case for Pessimism', *Climate Law*, Vol. 1, 2010, pp. 177–199.

to decide the balance between domestic and international measures. Joint implementation opens up for project-based emissions trading between two Annex I countries. So far this provision has had little practical significance, due primarily to the limited interest and preparedness in Russia, which is the most promising partner for this implementation mechanism. The two other provisions are more important. The CDM allows Annex I parties to offset their emissions with documented emissions reductions in developing countries. It took time before the CDM approach got under way, but now it is gaining momentum. The major economies in the South and East have been granted the majority of CDM projects, with China the biggest recipient by far.[22] The poorer countries of the South have neither the infrastructure nor the institutional capacity to utilise this mechanism. Various other problems with the CDM have been identified, such as carbon leakage, high transaction costs due to the large UN bureaucracy required for verification of emissions reductions, and serious measurement problems related to the validity of many CDM projects.[23]

The purpose of setting up the emissions trading mechanism was to establish a price for GHGs and to encourage cost-efficient emissions reductions. The mechanism allows companies to reduce emissions at a lower cost through trade than would be possible if they had to implement the reductions on their own. The Kyoto Protocol has spurred the establishment of emissions trading systems in quite a few Annex I countries, the most comprehensive system being the European Union Emissions Trading System (EU ETS). There are similarities between the Kyoto Protocol trading system and the EU ETS, but there are also important differences.[24] The effects of the EU ETS on emissions have so far been limited, because too many allowances were allocated to industry during the first phase. The Commission has learned from this mistake and has strengthened the system for the 2008–2012 period and even more so for emissions trading in the post-Kyoto phase (2013–2020).

Turning to the outcome indicator, seen as the development in GHG emissions in Annex I parties, the latest figures from the UNFCCC (2010) look quite promising at first glance.[25] Between 1990 and 2008 aggregate emis-

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[22] G.M. Heggelund and I.F. Buan, 'China in the Asia–Pacific Partnership: Consequences for UN Climate Mitigation Efforts', *International Environmental Agreements*, Vol. 9, 2009, pp. 301–317.

[23] Council on Foreign Relations, *Confronting Climate Change: A Strategy for U.S. Foreign Policy*, Independent Task Force Report No. 61 (New York: Council on Foreign Relations, 2009).

[24] J.B. Skjærseth and J. Wettestad, *EU Emissions Trading: Initiation, Decision-making and Implementation* (Aldershot: Ashgate, 2008).

[25] UNFCCC Subsidiary Body for Implementation, *National Greenhouse Gas Inventory Data for*

sions among the 41 Annex I parties had decreased by 6.1 per cent, excluding LULUCF.[26] However, there are important nuances in this seemingly positive picture. While GHG aggregate emissions in countries with economies in transition have decreased by some 37 per cent, aggregate emissions in other Annex I countries have increased by 7.9 per cent.[27] The reason for the strong reductions in GHG emissions in the economies-in-transition parties is not the climate regime but the massive reduction in industrial production in the wake of the collapse of the East European political and economic system in the early 1990s. This points up the importance of controlling for other factors when we trace causal effects. To get a better picture of the outcome of the climate regime, we will have to look at emissions from other major Annex I parties. Given that the USA is not party to the Kyoto Protocol, it is not surprising that its GHG emissions have increased significantly (13.3 per cent).[28] What is unexpected is that emissions in ten Kyoto Protocol parties have increased more than US emissions. Emissions in the EU, the most ambitious actor, have decreased by 11.3 per cent, illustrating that the EU and most EU countries are making a real effort to reduce their emissions.[29] An important reason for the reduced EU emissions, however, is the strong emission reductions in the UK and Germany (18.5 per cent and 22.2 per cent respectively).[30] This development is largely unrelated to the Kyoto Protocol. German emissions were significantly reduced in the 1990s due to the reunification of Germany and the ensuing closure of inefficient East German energy facilities. The UK reductions are due largely to the replacement of coal by reserves of offshore gas, implemented for economic reasons. Important nuances are added by controlling for population growth, giving figures for development in per capita emissions; in 2007 analysts stated that:

> Indeed, when one compare trends in per capita emissions, it is striking that the only country to see a decline other than the three "windfall reductions" (Russia, Germany and the UK) is the US, which has been vilified for its decision not to ratify the Kyoto Protocol.[31]

A few more words should be added to this rather gloomy account. First, the Kyoto Protocol did not enter into force until February 2005 and the figures

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the Period 1990–2008, FCCC/SBI/20108/18, (New York: UNFCCC, 2010), available at <http://unfccc.int/resource/docs/2010/sbi/eng/18.pdf>.

[26] Ibid.

[27] Ibid.

[28] Ibid.

[29] Ibid.

[30] Ibid.

[31] K. Harrison and M. Sundstrom, 'The Comparative Politics of Climate Change', *Global Environmental Politics*, Vol. 7, 2007, p. 13.

presented above are from 2008. One could argue that not much could be expected at this stage and the proof of the pudding in terms of goal achievement cannot be determined until 2012. However, this also implies that the norms and goals agreed on in the 1992 UNFCCC have had limited significance. Still, several measures to curb emissions have been adopted. While the USA has relied solely on voluntary measures and research & development, the EU and other Annex I parties have adopted more aggressive measures.

We can be very brief regarding the third indictor, the impact of the climate regime on the climate system, as it is obvious that the score is bound to be low.[32] This indicator is normally very difficult to use due to the influence of a host of other factors unrelated to the climate regime and the time it would take before the climate system responds to emissions reductions. However, when we know that instead of the heavy emission reductions repeatedly called for by the IPCC, emissions are increasing globally, we may safely conclude that the changes thus seen far in emissions trends are not sufficient for a dramatic reduction in the risk of a human-induced climate change. Any slower growth in emissions in recent years is likely to be a result of the global economic recession, and not the climate regime.

Considering the relative immaturity of the regime and the extreme malignancy of the problem, the rather low score on the different indicators is not surprising. How can the Copenhagen Accord and the Cancun Agreement be expected to affect the level of GHG emissions? Most analysts see a positive development in the Cancun Agreement, as it is, in contrast to the Accord, embedded in the UN system; moreover, all major states have for the first time pledged explicit action. If the promises to raise large sums of money as envisioned in the Cancun Agreement are realised, that will also make action in the South more likely. Nevertheless, according to one account: 'Still as important as these agreements may be, they represent only small steps in reducing global emissions.'[33]

EXPLAINING THE EFFECTIVENESS OF THE CLIMATE REGIME

Approach and Forum

First some remarks on the approach chosen for dealing with this problem and the choice of broader institutional nesting for the political process. The agenda-setting stage was important for the subsequent design of the climate regime in at least two ways: First, because of the 'targets-and-timetables'

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[32] *Earth Negotiation Bulletin*, Vol. 12, No. 498, p. 29.
[33] Ibid.

approach introduced for the first time at the Toronto Conference in 1988. Second, the decision to give industrialised countries main responsibility for the problem, which implied a requirement that they should act first. After two decades of negotiations, these are still key features of the negotiations and the regime design. Another important factor was the all-inclusive *global* approach decided by the UN General Assembly. Already at the first meeting of the International Negotiating Committee in 1991 more than one hundred nations participated; since then, participation has expanded continuously. The Climate Convention was signed by 153 states in 1992, and now there are 194 parties. Since all nations of the world contribute to the problem and are all affected by it, it makes intuitive sense to choose a global approach. While this feature gives the regime higher legitimacy, it may also have contributed to lower effectiveness. The all-inclusive approach may be *one* reason for the slow progress. It is noteworthy that the 20 largest economies of the world are responsible for more than 80 per cent of global GHG emissions.[34] In this perspective, a negotiation setting with fewer participants might have been a more effective approach. For instance, the more limited and incremental approach chosen in the development of the ozone regime may help to explain the relatively faster progress of this regime.[35] This line of thinking is one reason for the recent US initiatives to establish negotiating arenas with limited participation as a supplement the UN process. We return to this below.

The Climate Convention

During the agenda-setting phase, the scientific and green NGO communities (e.g., at the Toronto Conference) called for ambitious targets within short time-frames. While the 'targets-and-timetables' approach was favoured by a large majority of the industrialised countries, increased government participation implied that the high ambitions from Toronto were tuned down. The new focal point became stabilisation of GHG emissions at 1990 level by the year 2000 (which also reflected a huge underestimation of the costs and complexities involved). Most key actors except the USA[36] wanted this to be included as a legally binding obligation in the Convention. The USA, in contrast, argued that a binding target would be random and too costly, and

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[34] *Climate Analysis Indicators Tool* (CAIT), Version 8.0 (Washington, DC: World Resources Institute, 2011), available at <http://cait.wri.org>.

[35] R.E. Benedick, *Ozone Diplomacy: New Directions in Safeguarding the Planet* (Cambridge, MA: Harvard University Press, 1998).

[36] D. Bodansky, 'The United Nations Framework Convention on Climate Change. A Commentary', *Yale Journal of International Law*, Vol. 18, 1993, pp. 451–558.

advocated a 'no regrets' policy which also would allow time for more research to reduce the scientific uncertainty surrounding the climate issue. The soft political target (a non-binding aim to stabilise emissions) that was ultimately adopted in the Convention is thus often seen as a victory for the US position. The EU, caught up in its own internal negotiations over the controversial carbon/energy tax, played a limited role in the negotiations of the Climate Convention. The lack of unity within the EU at this time was made abundantly clear when the UK played a key role as a mediator between the USA and other parties (including other EU member states) at a later stage of the negotiation process.

The Kyoto Protocol

In the post-Rio era many key actors changed their position, thus creating new alliances. One main reason was better knowledge and understanding of the costs associated with emissions reductions and hence the national economic interests that were at stake. Canada, New Zealand and Australia, who had been associated with the pro-active group fronted by the EU, now switched sides and joined forces with the USA and Japan in a rather loose coalition known as JUSCANNZ (acronym for four of the main participants of the group). Later renamed the Umbrella Group and joined by Russia, the group is often seen as a 'laggard'. The Umbrella Group was constituted by the key proponents of a differentiated approach whereby commitments were set in accordance with country-specific variations in abatement costs. In contrast, realising the benefits that its economy-motivated shift from coal to gas would have for domestic abatement costs, the UK, which had previously pursued a cautious position, now stood forth as a pusher. The UK joined forces with another key 'pusher', Germany, and thereby strengthened the position of the EU. The EU, spearheaded by Germany, was to play a key role in the adoption of the 1995 Berlin Mandate.

While the USA only reluctantly accepted the Berlin Mandate, the Geneva Declaration, adopted at COP 2 in 1996, was enthusiastically embraced. The main reason for this shift in position was that Vice-President Al Gore, a long-standing climate activist, had succeeded in convincing President Clinton and the Administration to adopt a more pro-active international climate policy. This change in the US position was probably the most important factor enabling agreement on the Geneva Declaration. In the crafting of the Kyoto Protocol, the USA continued to play an influential role. According to one observer: 'Within this panoply, U.S. dominance is striking… and to discover the sources of most ideas in the Protocol, one needs only to read the

U.S. proposals of January 1997.'[37] Again Vice-President Gore played a key role. When negotiations were at the brink of collapse, Gore made a brief visit to Kyoto and mandated the US delegation to demonstrate increased flexibility. That paved the way for agreement.

The EU, on the other hand, was still struggling with internal conflicts and spent most of its energy at COP 2 hammering out an internal burden-sharing agreement. Prior to COP 3, however, the EU had finally agreed on a burden-sharing agreement, which allowed a more ambitious EU position. While this may have given the EU the moral upper hand prior to negotiations in Kyoto, observers seem less impressed by the EU's negotiation performance: 'The coherence of the U.S. administration contrasted with the unwieldy morass of EU decision making in the negotiation process.'[38] Supported by environmental NGOs, the EU opposed the flexible mechanisms pursued by the USA. The EU wanted more focus on domestic emissions reductions and claimed that the flexible mechanisms would undermine the environmental integrity of the Protocol. Nevertheless, the outcome of the negotiations has been characterised as a 'genuine compromise' in the sense that 'the EU got their numbers, the U.S. got their institutions, Japan got their prestige as a host, the JUSCANNZ got their differentiation and the developing countries avoided commitments.'[39]

The Post-Kyoto Process

While the US Administration may have been able to convince its international counterparts on the key design features of the Kyoto Protocol, it was not successful in convincing the US Senate about the need for a Kyoto Protocol. Even before the negotiations in Kyoto commenced, the Senate had expressed its sentiments concerning a 'Kyoto-type' agreement. In July 1997, the Senate unanimously adopted the Byrd–Hagel resolution, which implied that an international agreement that did not include 'meaningful' developing-country participation would not be ratified. The Kyoto Protocol was therefore never submitted to the Senate for ratification. At the international level, US negotiators attempted to water down the Kyoto commitments to make the agreement more acceptable to a broader set of domestic-level US interests. Again, however, the EU offered vigorous opposition. The EU wanted to ensure domestic action and proposed a cap on emissions trading whereby 50

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[37] M. Grubb, C. Vrolijk and D. Brack, *The Kyoto Protocol: A Guide and an Assessment* (London: Royal Institute of International Affairs, 1999), p. 12.

[38] Ibid.

[39] S. Andresen, *The Development of the Climate Regime: Positions, Evaluation and Lessons*, FNI Report 3/1998 (Lysaker: Fridtjof Nansen Institute, 1998), p. 28.

per cent of a party's commitment to emissions reductions would have to be implemented domestically. Similarly, the EU wanted to minimise the possibilities of using sinks as a climate measure.[40] These positions generated strong conflicts between the EU and the US-led Umbrella Group and caused the breakdown of negotiations at COP 6 in The Hague in 2000. In 2001 George W. Bush took over the US presidency, and in March that year he declared that the Kyoto Protocol was unacceptable to the USA. The EU and others tried to bring the USA back into the negotiations, but failed.

The EU then mobilised its political energy to ensure that the Protocol would enter into force without the USA. One might have expected negotiations to be easier after the US exit, but Washington's allies, 'the Gang of Four' (Australia, Canada, Japan and Russia), actively sought to weaken the commitments, and in this they were largely successful. The result was an increasingly watered-down agreement: While the outcome of the resumed COP 6 in 2001 has been labelled 'Kyoto Light', the COP 7 Marrakesh Accords have been described as 'Kyoto Ultra light'.[41] Interestingly, the EU now gave concessions on issues it previously had refused to concede to the USA. Thus, the revised interpretation of the Protocol was close to what the previous US Administration had worked actively to achieve.[42] Still, in the situation that arose with the US exit, had it not been for the pressure of the EU, the Kyoto Protocol may well have been killed off. Japan and Canada would probably not have ratified without the pressure exerted by the EU. Russia also had to ratify to satisfy the requirements for the Protocol's entry into force (see above). Given that its GHG emissions were more than 30 per cent below 1990 levels, Russia had nothing to lose from ratification. Russia was nevertheless reluctant, and it was only when the EU promised to support the Russian bid for WTO membership that it decided to ratify during the autumn of 2004, ensuring the Protocol's entry into force in March 2005.[43] Australia had decided to follow the US exit, but subsequently ratified the Protocol in 2007 after a change of government.

At COP 8 in New Delhi in 2002, the EU tried to initiate discussions on future commitments, after the Kyoto Protocol commitments were set to expire in 2012.At this meeting the contours of a new alliance between the USA

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[40] A 'sink' is defined as 'any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere. Forests and other vegetation are considered sinks because they remove carbon dioxide through photosynthesis'. Source: 'UNFCCC Glossary of Climate Change Acronyms', available at <http://unfccc.int/essential_background/glossary/items/3666.php#S>.

[41] Hovi, Skodvin and Andresen, 'The Persistence of the Kyoto Protocol', p. 19.

[42] Ibid.

[43] Oberthur and Kelly, 'EU Leadership in International Climate Policy'.

and the G-77 could be observed. They had one common interest: not to take on any kind of commitments. Together they constituted a formidable front, making it exceedingly difficult for the EU and other more pro-active parties to move the process forward. The EU wanted to prolong the Kyoto approach, only with stronger commitments. The USA rejected this, and wanted no discussions on future commitments. The major developing countries were frustrated at the lack of financial and technological transfers and the lack of progress in emissions reductions among the industrialised countries. Consequently, also the developing countries refused to discuss future commitments. The progress made in Bali should probably be seen as a reflection of the heightened political attention to climate change, creating the 'the Spirit of Bali'. Still, the US/EU haggling over numbers continued. Although negotiations had intensified, 'the Spirit of Bali' was subdued at the COP 14 in Poznan in 2008.[44] By then, the political context within which negotiations took place had been affected by the economic recession that hit the global economy in September that year. The atmosphere in Poznan was characterised more by the problems that economic recession would create, than by the 'green window of opportunity' it represented according to the optimists. In addition, the EU (again) was preoccupied with internal discussions over its climate and energy legislative package for implementing the EU's post-Kyoto climate ambitions. Although the election of Barack Obama created significant optimism for a more ambitious international US climate policy, the 'lame duck' US negotiators present at Poznan had little to add to the process. COP 14 became characterised by observers as 'one of those in-between COPs'.[45]

COP 15 was billed to become another milestone in the history of the climate change negotiations, and the interest shown by NGOs and the media was overwhelming. In light of the high expectations in many quarters, the actual negotiation process was a disappointment, and there was no agreed common document when the policy-makers arrived. Towards the very end a small group of emerging economies, China, India, Brazil and South Africa, together with the USA was able to hammer out the Accord, a document of two and a half pages, 'reminding us of the fable of the mountain that gave birth to a mouse'.[46] Many blamed the USA, the Senate in particular, for the rather bleak outcome, but the most powerful veto-power was probably

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[44] 'A Brief Analysis of COP 14 & COP/MOP 4', *Earth Negotiation Bulletin*, Vol. 12, No. 395, pp. 17-19, at p. 19.

[45] Ibid.

[46] S. Andresen and E.L. Boasson, 'International Climate Cooperation: Clear Recommendations, Weak Commitments', in S. Andresen, E.L. Boasson and G. Hønneland (eds), *International Environmental Agreements: An Introduction* (London: Routledge, forthcoming 2011), pp. 87–122.

China, which managed to strip the document of all emission targets.[47] Many countries as well as the EU, completely sidelined in Copenhagen, were happy with neither the process nor the outcome, but accepted the accord as it was the only viable option. However, a handful of developing countries did not accept the Accord. Expectations were therefore extremely modest prior to COP 16 in Cancun. Against this background most observers deemed the outcome quite positive. However, the substance of the Agreement is fairly similar to the Accord, but the process was far more transparent and inclusive than the Copenhagen negotiations. The process was also made easier, as none of the truly controversial issues like prolongation of the Kyoto Protocol were dealt with.

Alternative or Supplementary Approaches

For a long time it could be argued that the Kyoto Protocol, although weak, was 'the only game in town'. That is no longer the case. In 2005 the USA and Australia were instrumental in establishing the Asia-Pacific Partnership on Clean Development and Climate (APP) and were joined by other economic and political heavyweights: China, India, Japan, South Korea and Canada (which joined in 2007). The partnership does not involve any binding commitments and is based on the philosophy that environmental quality improves with economic growth. The partnership represents a sectoral approach, where the partners collaborate on project-based and sector-specific benchmarks and standards to prevent environmental degradation, enhance economic growth and reduce GHG emissions. The main focus of the partnership is thus on technology development and transfer.[48] The establishment of the partnership, however, was dismissed by critics as a cynical diversion from progress made on the Kyoto Protocol and 'a red herring to distract attention from the Bush Administration's failure to tackle the greatest environmental challenge of our time.'[49] When the partnership was launched, therefore, observers strongly questioned its stated supplementary role to the UN track and the Kyoto Protocol. Rather, they argued that the partnership

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[47] 'Global Deal on Climate Change in 2010 "All but Impossible"', *The Guardian*, 1 February 2010.

[48] For a detailed account of the Asia-Pacific partnership, see 'Special Issue: Exploring and Explaining the Asia Pacific Partnership on Clean Development and Climate', *International Environmental Agreements: Politics, Law and Economics*, Vol. 9, No. 3, 2009.

[49] Statement released by (then) House Democratic Leader Nancy Pelosi: 'Bush Administration Lacks Serious Policy on Global Warming', retrieved 31 January 2007 from <www.house.gov/pelosi/press/releases/Jan06/warm.html>.

could represent a heavy competitor to the UN track that could act derail and delay negotiations further.[50]

Another initiative under the Bush Administration that was viewed with suspicion as an effort to sidetrack the UN-based negotiation process was the establishment of the Major Economies Meeting in 2007. This constituted an informal negotiating arena at which the 17 largest economies, responsible for almost 80 per cent of global GHG emissions, met for informal discussions on how to approach the climate issue.

The APP has continued with the Obama Administration and is described as a low-key but quite effective tool in terms of practical implementation measures.[51] The sectoral approach this partnership represents may therefore continue to play a role in international climate negotiations in the coming years. Moreover, the Major Economies Meeting, initiated by the Republican Bush Administration was also endorsed by the Democratic Obama Administration in its initiation of the Major Economies Forum, early in 2009. The Forum was instrumental in reaching agreement at the G8 meeting in May 2009 on the '2°C target'. This meant agreeing that a global average temperature increase above 2 degrees Celsius could trigger irreversible climate change and should therefore be avoided; it was later laid down in the Copenhagen Accord and the Cancun Agreement.

Too Little Political Energy to Tackle a 'Malign' Problem

Climate change is a long-term issue with uncertain benefits and high up-front costs for most actors. It is characterised by a malign problem structure, and the regime is still quite immature. All the same, there have been some achievements. Considerable scientific advances have been made and innovative implementation mechanisms have been developed. Still, although we cannot measure performance conclusively before 2012, the picture so far looks rather bleak. The USA has been a rather consistent 'laggard' most of the time. It has also been the most influential player, with a decisive role in the making of the Climate Convention, the Kyoto Protocol as well as the Copenhagen Accord. In these processes the USA demonstrated considerable negotiation skills, but has influenced the process mostly through 'negative veto power'. The US position has also made it exceedingly easy for major developing economies like China to resist taking on legally binding

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[50] J. McGee and R. Taplin, 'The Asia-Pacific Partnership on Clean Development and Climate: A Complement or Competitor to the Kyoto Protocol?' *Global Change, Peace & Security*, Vol. 18, 2006, pp. 173–192.

[51] Interviews at environmental think-tanks in Washington DC, February 2010.

economy-wide commitments. The reluctance of developing countries to take on commitments is understandable in light of the failure of the developed/ industrialised countries to provide financial and technological assistance, and the poor performance of most Annex I countries in reducing their own emissions. Against such formidable opposition the EU has not been strong enough to lead the process forward, although it proved instrumental in getting 'hard figures' into the Protocol, as well as getting the Protocol ratified (unfortunately, without the USA). One reason the EU has not been more influential has been its problems with internal unity. Also, its cumbersome internal processes have obstructed the necessary negotiation flexibility, as was clearly demonstrated in Copenhagen. A further reason may be that, for the USA, even ambitious EU climate policies were not seen as outweighing the costs (in economic as well as environmental terms) associated with the unmitigated growth in GHG emissions in developing countries such as China and India. So far, therefore, negotiators have not succeeded in closing the gap between the advice from the scientific community and the actual provisions of the climate regime.

THE FUTURE OF THE CLIMATE REGIME

Judging from the experiences of some twenty years of negotiations, there is no reason for optimism with regard to the world's ability to deal effectively with the climate change problem in the years to come. More specifically, the future looks bleak for three reasons: lack of political will among key actors, the ineffectiveness of the UN approach, and, third, the prospects for strong economic growth in the global East and South. There was considerable optimism after the election of President Obama in the USA as he had the climate change issue high on his agenda, but the November 2010 mid-term elections demonstrated that neither the US public nor Congress was ready to follow him. At present, therefore, there seem no chances that federal climate legislation will be adopted in the USA. Nor is it the only 'difficult' player. Japan and Russia have clearly stated that they are not interested in an extension of the Kyoto Protocol; moreover, emissions are rising steeply in countries like Australia and Canada, although both have ratified the Kyoto Protocol. The only major Annex I actor that seems to give high priority to the issue is the EU – but, with the drop in public concern combined with considerable internal opposition, it remains to be seen how long this role can be upheld. Recent years have also witnessed strong growth in the influence of the emerging economies, China in particular, reflecting new geopolitical realities. China has done much domestically to reduce its emissions from a 'business as usual' scenario, but continued economic growth is still its first prior-

ity, which means that also emissions will continue to rise. Indeed, the same goes for all other developing countries. In view of the historical responsibility of the Annex I countries for this problem, we can hardly expect any front-runners among the G-77 countries in the foreseeable future. The two most important actors in future negotiations will be the USA and China. These two biggest emitters seem locked in mutually contingent positions, with neither willing to take on commitments without guarantees that also the other will do so. Moreover, China had to take much of the blame for the deadlock that characterised the Copenhagen meeting. In Cancun, open sparring was avoided – helped by the fact that all the difficult issues were postponed.

Some observers have also expressed deep scepticism to the UN system itself as an appropriate arena for climate negotiations – a view reinforced by the chaos and mismanagement that characterised the Copenhagen meeting.[52] While less than 20 countries control more than 80 per cent of global emissions, the UN operates under a decision rule of consensus whereby all 194 parties must agree, in order for an agreement to be adopted. In Copenhagen a handful of countries prevented the Copenhagen Accord from acquiring official UN status. Despite some progress in this regard in Cancun, that was no real test of the effectiveness of the UN approach, as the most controversial issues were not on the table.

Within the UN framework, considerable energy has been expended on negotiating long-term targets. But what practical value do such goals have in terms of actually reducing emissions? Former deputy director of the International Energy Agency, William Ramsay, holds that these long-term targets (for 2020, 2030 and 2050) are 'meaningless'. Instead, he argues, targets need to be formulated in accordance with the political cycle 'so that the politicians who put [these] targets into place can be held accountable for whether or not they are being achieved.'[53]

Considering these obstacles, it may be well beyond 2012 before a new legally binding instrument could be in place. Perhaps today's rather low-key 'bottom–up' and 'pledge and review' approach without legally binding targets is in fact what is politically feasible to achieve. Considering the slow pace of the UN approach it is also likely that the process will be continued outside the UN track as well. In that case, it is important to have close linkages among and between the different forums, so as to forge synergies

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[52] 'Global Deal on Climate Change in 2010 "All but Impossible"', *The Guardian.*

[53] 'Interview: UN Climate Talks Must Move Beyond Rhetoric', *EurActiv.com*, 8 December 2008, available at <www.euractiv.com/en/climate-change/interview-un-climate-talks-move-rhetoric/article-177768>.

and not conflicts. Regardless of approach, however, it is hard to see how this problem can be dealt with effectively as long as the political will is lacking among key actors. In fact, even if most Annex I parties together with China should prove able to reduce their emissions sharply, the effects on the climate system would be very modest. The long-term challenge, therefore, is to achieve significant reductions in *all* major emitters. To achieve the 2°C target – which some scientists hold is not enough to prevent 'dangerous anthropogenic interference with the climate system' – global emissions will need to be reduced by at least 50 per cent by 2050, and by 80 to 90 per cent by the year 2100.[54] We should consider this in light of the scenario of 600 to 1200 per cent growth in the world economy over the next century due to strong economic growth in developing and economies-in-transition countries,[55] followed by steep population growth in the developing world, resulting in a total world population of perhaps 9.5 billion already by 2050.[56] The key players of today – the USA, the EU and China – will not be the key players of tomorrow. Even if China could reduce its emissions by 95 per cent by the year 2100 from a business-as-usual baseline, that would still reduce global average temperature by a mere 0.3° C.[57] Thus, even taking into account continued technological improvements and significant financial transfers, the 2°C target still looks like 'mission impossible'.

[54] Røgeberg, Andresen and Holtsmark, 'Climate Treaties: The Case for Pessimism'.

[55] IPCC, *IPCC Special Report: Emissions Scenarios*, a special report of Working Group III (Cambridge University Press, 2000).

[56] United Nations, 'World Population Prospects: The 2008 Revision', available at <http://esa.un.org/unpp>.

[57] Røgeberg, Andresen and Holtsmark, 'Climate Treaties: The Case for Pessimism', p. 10.