Evaluation of the Climate Change Regime and Related Developments

Joyeeta Gupta

The Climate Change Problem

The greenhouse gases surrounding the earth have made the earth habitable. However, since the industrial revolution, anthropogenic greenhouse gas emissions from industrial and agricultural processes have led to high concentrations of these gases in the atmosphere which may cause an enhanced greenhouse effect. This effect may have severe consequences on the coastal regions of the world and on the life-support systems of ecosystems, and may affect agriculture, food, and water supply.[1]

This essay evaluates the international response to the climate change problem, the national implementation process, the impact of such implementation on the problem, and the barriers and opportunities for further progress. In undertaking the analysis, it will focus on the degree of success achieved in the regime. Success depends on the perspective from which the regime is perceived, and a distinction is drawn here between the success embodied in the regime from a political, legal, institutional, scientific, environmental, and economic perspective.

Defining the limits to the climate change problem is a challenging task. Interviews with negotiators and policy makers reveal that while for some the problem is caused merely by the emissions of greenhouse gases, such as carbon dioxide and methane, for others it is caused by production and consumption patterns, the underlying political and economic systems, and current development patterns. This also has implications for the way in which the solution is perceived. For some the solution is to change the system at the margin and reduce emissions incrementally wherever possible; for others it is structurally to change the production and consumption systems and to hold polluters responsible.[2] Since the emissions of greenhouse gases are closely linked with the economic growth of countries, reducing these emission levels, or even their expansion, is expected to have an impact on national economic growth as it is currently defined.[3]

Thus, decisions that are perceived as having a negative impact on national economic growth should be based on credible scientific evidence. The state of the art knowledge is presented in the five-yearly reports of the Intergovernmental Panel on Climate Change (IPCC). IPCC concludes, on the basis of existing science, that 'the balance of evidence suggests a discernible human influence on the global climate.'[4] However, other scientists claim that the IPCC conclusions are faulty, since they do not adequately take into account the data on water vapour, sulphur dioxide, and aerosols, the complicated role of oceans as sinks for carbon dioxide, and the impact of carbon dioxide emissions in stimulating the growth of plants. They also argue that the IPCC conclusions are based on unrealistic models and are political and not scientific assessments.[5] The scientific debate indicates that there is some degree of confidence in the data on emission levels, but there is less confidence about the role of sinks in absorbing these emissions and the impact of the emissions on the global climate. Given the scientific uncertainty, 'we will have to abandon our unrealistic demand for a single certain truth and instead strive for transparency of the various positions and learn to live with pluralism in climate change risk assessment.'[6] While governments and environmental non-governmental organizations (NGOs) accept the validity of IPCC science, the position of industry has become divided over the years. This is reflected in the negotiations, as can be seen in the following sections.

The International Response

More than a decade after the 1979 World Climate Conference, the adoption took place of the United Nations Framework Convention on Climate Change (UNFCCC) (May 1992)[7], and the Kyoto Protocol to the United Nations Framework Convention on Climate Change (KPFCCC) (December 1997).[8] The most recent meeting of the Conference of the Parties took place in November 1998 in Buenos Aires.

The UNFCCC states that the ultimate objective of the Convention and any related legal instrument is to achieve the stabilization of greenhouse gas concentrations in the atmosphere at a level that would enable ecosystems to adapt naturally and would not harm food production.[9] This objective is to be achieved by measures guided by the

principles of equity and the common but differentiated responsibilities and respective capabilities of developed and developing countries (vulnerable countries in particular), and the need for precautionary measures, sustainable development, and a supportive, open economic system.[10]

Furthermore, the Convention divides the world into two groups—developed (Western and Eastern countries with economies in transition) and developing countries. The former are expected in vaguely worded text[11] to reduce their emissions of carbon dioxide and other greenhouse gases not controlled by the treaties on the ozone layer (e.g. nitrous oxide and methane) by the year 2000 to about 1990 levels.[12] The Kyoto Protocol includes explicit targets or 'assigned amounts' for developed countries which are expected jointly to reduce their emissions of six greenhouse gases (among them hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride) by at least 5 per cent below 1990 levels (and in some cases 1995 levels) in the period 2008–12.[13] Individually, these countries have separate commitments. The European Union countries are expected to reduce their emissions by 8 per cent, the USA by 7 per cent and Japan by 6 per cent. Australia, Iceland, and Norway are allowed to increase their emissions. The remaining countries are allowed varying levels of reduction.[14]

Under the Convention and the Protocol, Western developed countries are expected to provide financial assistance to the developing countries and co-operate in the field of science and technology transfer to enable these countries to adopt more climate-friendly technologies and to adapt to the potential impacts of climate change.[15] The Convention mentions that countries may jointly implement their obligations without defining joint implementation.[16] The view of most Western negotiators was that joint implementation would enable a Western investor to invest in greenhouse gas-friendly projects in Eastern and Central Europe and in the developing countries in return for emission reduction credits.[17] Many developing countries opposed joint implementation because they feared that this would reduce the incentive for developed countries to take serious domestic emission reduction measures, and that the developed countries would buy the cheap emission reduction options in the developing countries. At a later stage, when the developing countries would themselves have to reduce their emissions, only the more expensive emission reduction options would be available.[18] In 1995, at the first Conference of the Parties, a pilot phase on Activities Implemented Jointly was launched which would permit countries to participate voluntarily in such projects, but no crediting was allowed during the pilot phase.[19] The 1997 Kyoto Protocol allows joint implementation with crediting among the developed country parties and establishes a Clean Development Mechanism (CDM), which aims at enabling projects in developing countries that should achieve sustainable development, contribute to the ultimate objective of the Convention, and assist developed countries in complying with their quantified emission reduction and limitation commitments.

Under the Protocol, countries with commitments are also allowed to participate in emission trading schemes.[20] Such schemes call for the division of a budget of permissible emissions among countries. Those countries that do not use their complete share may sell the unused portion to those who need them. Thus, over-users have an incentive to reduce their emissions and under-users may profit financially. In the Kyoto Protocol, the assigned amounts (or quotas) have been allocated to the developed countries and are equivalent to their emission reduction commitments. The underlying rationale of these co-operative mechanisms is to ensure that global emissions of greenhouse gases are reduced in a cost-effective manner in line with the principles in Article 3 of the UNFCCC.

Under the Convention, five bodies have been established. The Secretariat makes arrangements for the annual meetings of the Conference of the Parties. A Subsidiary Body for Scientific and Technological Advice provides timely advice on scientific and technological issues to the Conference of the Parties. The Subsidiary Body for Implementation provides assistance in assessing and reviewing the implementation of the Convention. The Convention also identified the Global Environment Facility as an interim operating entity to provide financial resources on a grant or concessional basis, including for technology transfer, to the developing countries.[21] The Kyoto Protocol will use the Secretariat and the subsidiary bodies established under the Convention, and the Conference of the Parties to the Convention will serve as the meeting of the Parties to the Protocol. Each party to the Convention is expected to prepare a national communication to report on national emissions and the measures being taken to deal with them.[22]

The negotiations are influenced by the presence of environmental NGOs, representatives from industry, and the scientific community. Around 300 environmental NGOs co-operate under the framework of the Climate Action Network.[23] This network provides information through its daily newsletter *ECO* during the negotiations, lobbies national negotiators, observes proceedings, and makes statements during the negotiations (if the chair permits). Arts (1998) argues that if one were to take the counter-factual argument into account, i.e. if there had been a comparable climate change treaty had the NGOs not been present, then it would be quite clear that the NGOs have had a major impact on the negotiations.[24] He claims, however, that NGOs had no direct impact on the text of the Convention, had some limited indirect impact on certain articles, did not have much impact on the review of the national communications, and had some political influence,

but generally overrate their own influence on the Convention.[25] My own observations and interviews indicate that they ensure the transparency of the process, they provide huge amounts of information which is avidly read by negotiators from developed and developing countries, and they very much influence the way negotiators think, even if their influence on the negotiation outcome is less traceable.

The influence of the scientific community through the reports of the IPCC is substantial.[26] The negotiations draw heavily from the scientific reports, and the role of the Subsidiary Body on Scientific and Technological Advice (SBSTA) is to present this scientific material in a usable form to the Conference of the Parties. An IPCC/SBSTA Joint Working Group has been established to ensure linkages between the information needs of the Conference of the Parties and the scientific community. There is thus a regular dialogue between the two communities.[27] At the same time, although IPCC can undertake a literature review of the available science in order to generate answers to the specific questions raised by the policy makers, it does not tackle new research. In general there is satisfaction with the IPCC documents. However, there is some concern about the degree to which social science aspects are reflected in the reports and the degree to which it provides support to the kinds of scientific concerns expressed by the developing countries.[28]

Industries are very active in the negotiation process, and they seek to influence this process through lobbying with negotiators and through the politicians in the domestic context. Although, in the early days of the negotiations, industry opposed action on the climate change issue, there is now a small but growing group that supports climate change policies.

The climate change regime thus has set a process in motion to address a politically difficult problem, and the Kyoto Protocol was one of the 'most complex multilateral negotiations of modern times'.[29] Given the enormous complexity and the diverging definitions of the problem as shown in the first section, this section has demonstrated that, from a political point of view, the differences in perceptions have been temporarily addressed through a common global framework of action. The North–North differences refer to the internal problems that the developed countries were themselves experiencing in articulating definitions, targets, measures, and co-operative mechanisms. For example, while the EU pushed for a 15 per cent reduction target,[30] the USA was only willing to go as far as stabilization of emissions in 2008–12.[31] Despite the divergence of starting points and the inflexibility of negotiating positions, an agreement was reached with legally binding targets. The serious North–South conflict in relation to the so-called voluntary commitments of developing countries was partially resolved through the inclusion of the CDM.[32]

From an economic perspective the regime appears to be cost-effective, since it establishes several flexibility mechanisms and allows the private sector to take a more important role in the process.[33] But implementing the Kyoto Protocol is also quite expensive. While the Clinton administration estimates an annual drop in GDP by 0.5 per cent, others estimate that the drop could be as high at 3 per cent.[34] Models indicate that the costs of achieving the Kyoto commitments primarily through domestic implementation will be in the order of 0.2 per cent to 2 per cent of the GDP in the USA, Europe, and Japan, and that with full trading the loss will be between 0.1 per cent to 0.3 per cent.[35] While these numbers may seem quite palatable, there are other economists who argue that the '35 per cent US CO_2 reduction required by 2008–12 entails economic dislocations that are unjustifiable on the basis of, at best, debatable science.'[36]

Although environmentalists do not think that the Convention goes far enough to address the gravity of the problem (see the section on the impact on the problem), the key success of the regime as it currently stands is in the bureaucratic rituals it has established. Parties to the Convention meet annually, preparatory meetings of the subsidiary bodies take place between one and three times a year, the Secretariat produces regular reports, and countries are in the process of preparing their follow-up national communications. The bureaucratic ritual serves three important purposes that are often underestimated. First, it ensures that there is a regular rhythm in the process, and negotiators and policy makers can feel the relentless pressure of the international process which ensures that the issue remains on the domestic agenda. Second, these procedures bring to light the difficulties in implementing the international agreements, and these difficulties can then be scrutinized and solutions suggested in the various meetings. This is an important part of keeping the process moving, of ensuring that the issue remains on the agenda, and of slowly and steadily enabling progression. Third, these reports provide civil society and NGOs information on the basis of which they can assess the progress made by countries from their perspectives, and identify where specific problems lie and how they can be addressed.

While sometimes such meetings can build up the momentum necessary to negotiate and adopt a protocol, at other times tactical errors can lead to disappointing achievements. Thus, for example, the first Conference of the Parties adopted the Berlin Mandate, which stated that, since the existing commitments of the developed countries were inadequate, a process should be initiated to identify policies and measures for reducing emissions in relation to specific time-frames.[37] This led ultimately to the Kyoto Protocol. However, at the same time the USA's ratifica-

tion of the Kyoto Protocol was linked to voluntary commitments to be adopted by developing countries.[38] The pressure put on developing countries to adopt commitments voluntarily, contrary to the provisions of the Berlin Mandate, ultimately led to protracted discussions, and little progress was made on the rules and modalities for the co-operative mechanisms at the meeting in Buenos Aires.[39]

National Implementation

As of February 1999, only the Climate Change Convention had entered into effect, and all developed country parties had submitted their first national communications, although 18 were late. Most of these communications have been reviewed in depth and country visits have been made in connection with the reviews.[40] Subak (1997) states that these reviews are in general non-confrontational in nature and that, since at least one-third of the countries had submitted inadequate data, it is difficult to verify the results.[41]

The second communications of the Western developed countries were due in April 1997, and most parties were late in submitting. The countries with economies in transition were due to submit their communications in 1998.[42] According to the Subsidiary Body for Implementation, Argentina, Jordan, Mexico, Micronesia, the Republic of Korea, Senegal, Uruguay, and Zimbabwe were among the earliest developing countries to submit their national communications.[43]

As mentioned earlier, the 'aspirational' goals in the climate treaty are not binding commitments. Nevertheless, many developed countries adopted measures domestically. Bert Bolin, chairman emeritus of IPCC, shows that, in the period 1990–95, the total carbon dioxide emissions in the European Union had decreased by 1 per cent of the 1990 level. This, of course, reflected changes in emission levels ranging from a reduction of 9 per cent in Germany to an increase of 49 per cent in Portugal. The rest of the OECD countries recorded an increase of 8 per cent: New Zealand topped the list with an increase of 16 per cent and Switzerland recorded a decrease of 5 per cent. The countries with economies in transition recorded a decrease of 29 per cent. This implies that the total reduction in the developed countries was in the order of 5 per cent. However, although some developing countries did adopt decisions to promote renewable energy and phase out subsidies,[44] their emissions increased by 25 per cent.[45]

The national communications also indicate the expected emission reductions by the year 2000. The emissions of the developed country parties, including the countries with economies in transition, are expected to be 3 per cent below 1990 levels in the year 2000 (if emissions from land-use change and forestry are omitted), and all countries with economies in transition and seven of the 24 Western countries will emit less than 1990 levels in the year 2000.[46] A key reason for the low growth in the overall emissions is the financial collapse in the countries with economies in transition. For countries such as Japan, the USA, Canada, Australia, Norway, and New Zealand, the difficulties in implementation lie in high, unforeseen economic growth and low prices of energy.[47]

The above discussion would suggest that, even prior to the entry into effect of the UNFCCC, significant emission reductions were recorded. By the year 2000 developed countries will have jointly stabilized their emissions of greenhouse gas emissions, and that should be reason enough to be satisfied with the achievements of the developed countries in relation to the aspirational goals in the UNFCCC. However, there is no sense of euphoria in the countries. This is probably because a closer examination of the data reveals that the emission reductions are more a result of economic collapse in the former Eastern bloc countries (including East Germany) and that the decrease does not reflect a structural change towards reduced emission levels. Subak concludes that, although countries have complied with their reporting requirements, most will not be able actually to achieve the goal of stabilization.[48] Furthermore, the emission reductions in the EU are likely to increase sharply after the year 2000 unless additional measures are adopted. Finally, the emissions in the USA and other developed countries are likely to increase steadily over the coming years. Thus, although the impression appears quite positive on the whole, it does not yet indicate that we have reached the peak of annual Western emission levels.

Since there are no real targets on technology transfer and assistance to developing countries, it is difficult to evaluate the extent of assistance being provided to the developing countries by the developed countries.[49] Large sums of money have been disbursed to assist these countries to prepare national emission inventories.[50] But there has been less money forthcoming to finance technology transfer. Developing countries are not entirely satisfied with the assistance being provided by the developed countries and feel that the developed countries have not adequately demonstrated their lead in this field.[51] In 1998 the US Secretary of State acknowledged to a domestic audience, 'We need support for the Global Environment Facility (GEF), which embodies the partnership for sustainable development that was forged in Rio. This partnership is not helped by the fact that, in each of the last three years, we have fallen short of our pledged share to the GEF. We need to do better than that. We need to meet our commitments—in full—this year and every year.'[52] The Buenos Aires Plan of Action, a decision adopted at the fourth meeting of the Conference of the Parties, focuses on strengthening the financial mechanism and the development and transfer of technologies, and on maintaining the momentum in relation to Activities

Implemented Jointly. At the end of 1998 there were 123 projects accepted, approved, and/or endorsed by national governments as Activities Implemented Jointly Projects, of which two are in Africa, 28 in Central and Southern America, ten in Asia, and the remainder in the countries with economies in transition.[53] Most of these projects are still in a planning stage; evaluating them in relation to the issue of credits is not possible, since credits for reducing emissions are not included in the projects.

The implementation of the Kyoto Protocol calls not only for alert governments but also for co-operative industry and society. Thus far, the Kyoto Protocol has been seen as a signal by some industries which have decided to demonstrate their willingness to take action. The European Business Council for a Sustainable Energy Future, E5, has argued in favour of developing a 'renewable portfolio obligation for all energy service companies',[54] and British Petroleum has adopted 'climate change principles' stating that a constructive precautionary approach needs to be taken within a global long-term framework that also gives weight to the developing world's particular interests. They argue that targets and timetables should be set that give clear signals to industry and that there should be flexible market mechanisms.[55] Shell has established Shell Renewables and on 16 October 1998 announced that it aims to cut its greenhouse gas emission from its global operations by 10 per cent in 2002 in relation to 1990 levels.[56] The European Gas Industry (Eurogas) supports a precautionary policy on the climate change issue.[57] Thus, one could argue that the Kyoto Protocol can be seen as a turning point in the process, since it has ensured a level playing field and has sent the signal that governments are serious about this problem.

Impact on the Problem

Let us now examine the extent to which the measures taken by countries have had or are likely to have a serious impact on the environmental problem at hand. According to the Intergovernmental Panel on Climate Change, 'Stabilization at any of the concentration levels studied (350–750ppmv) is only possible if emissions are eventually reduced to well below 1990 levels.'[58] From a scientific perspective, the decision to adopt binding commitments is a key decision in the right direction, but falls short of what is needed. Bert Bolin states: 'The inertia of the climate change system was not appreciated fully by the delegates in Kyoto. It therefore seems likely that another international effort will be required well before 2010 to consider whether further measures are warranted.'[59] Bill Hare of Greenpeace International explained on 6 March 1999 that the target falls far short of what is needed, since it slows down the projected rise in global temperature by only one tenth to two tenths of a degree centigrade by 2050.[60] These reduction trends are consistent with a stabilization of CO_2 emissions concentrations at 550 parts per million volume. At this level, it is expected that there will be significant ecosystem damage, 60 to 350 million more people will be at risk of hunger, there will be a significant loss of human life, and there will be a 50cm increase in the sea level, with all the attendant impacts.[61]

Furthermore, there is a perception that there are several loopholes in the Protocol. These include the exemption of emissions from international air and marine transport, which is a fast growing sector.[62]

The inclusion of the three new gases in the regime makes the scope more comprehensive, since these are also fast growing greenhouse gases. However, the target of 5.2 per cent applies to all these gases and allows parties to use the base year of 1995 in relation to the three new gases if they so wish. The new base year allowed 'Kyoto signatories the political kudos of agreeing larger numbers for exactly the same real effort'.[63]

Article 3.7 of the Kyoto Protocol allows developed country parties to inflate their base year emissions of CO_2 by including the emissions that occurred in 1990 resulting from land use change and forestry. This provision permits countries such as Australia to increase its emission levels in the base year against which its commitments for the year 2008–12 will be measured.[64]

The inclusion of sinks also complicates the verification of the achievement of the national commitments. The Kyoto Protocol refers to 'net changes in greenhouse gas emissions from sources and removals by sinks resulting from direct human induced land use change and forestry activities'[65] The inclusion of sinks is problematic partly because of the indeterminate language used in the Protocol[66] and, depending on the definitions used and the difficulties in estimating sinks, could imply a loophole in the target.[67] In relation to sinks, Professor Bert Bolin states: 'It is, however, not clear how to achieve what is envisaged in the Protocol.'[68]

There is also the problem of 'hot air', which refers to the fact that some countries have been allocated emission allowances that are higher than their probable future emission levels. If these countries are allowed to trade these emissions, then the related trading is unlikely to result in any real reduction in emissions.[69] Finally, there is the issue of verification of effectiveness. Lanchbery (1998) explains that verifying compliance with the Kyoto Protocol calls for an analysis of comparable national inventories of emissions and removals by sinks. However, there is uncertainty regarding emission factors, emissions from biological processes, and in relation to sinks. The uncertainties range from +/–5 per cent for most energy related sources in developed countries to +/–50 per cent for emissions in relation to for-

estry, land use, and agriculture. These uncertainties are multiplied if the emissions of different gases are put into one figure by using the global warming potential, which itself has an uncertainty range of about 30 per cent for each gas.[70]

The preliminary examination of the potential impacts of the Kyoto Protocol are that the loopholes, although considered necessary to gain the existing consensus on legally binding targets, have the potential of completely undermining the process. These loopholes may add up to a 10 per cent increase of total emissions from the developed country parties in relation to their 1990 emission levels.[71]

Barriers to Further Progress: Horizontal and Vertical Bottlenecks

The following section argues that there are serious barriers to further progress, but that these bottlenecks can also be avoided. On the basis of 150 interviews, I argued in 1997 that the climate change treaty ran the risk of a horizontal negotiation bottleneck if the developed countries decided against taking domestic measures on the grounds that any measures taken by them would be rendered negligible by the lack of action taken by developing countries, and if developing countries refused to take action on the grounds that the developed countries were responsible for the problem and should take action first. I also argued that the Convention ran the risk of a vertical standstill if, for lack of domestic support, governments are unable to implement the compromise negotiated at the international negotiations.[72]

Events, as they have unfolded since 1997, reveal that these are real concerns. Evidence of the horizontal bottleneck can be seen in the ratification politics in relation to the Kyoto Protocol. This will not enter into effect until 90 days after the date on which 55 Parties to the Convention, emitting at least 55 per cent of the total emissions of carbon dioxide emissions in 1990, have ratified it.[73] This implies that the majority of the developed countries need to ratify the Protocol for it to enter into effect. However, there are indications that the ratification process will not be easy. As of 4 May 1999, 84 countries had signed the Kyoto Protocol and only eight countries (Antigua and Barbuda, Bahamas, El Salvador, Fiji, Maldives, Panama, Trinidad and Tobago, and Tuvalu) had ratified the agreement.[74] Thus, for example, many EU member countries are unlikely to adopt unilateral measures and may not implement the Kyoto Protocol until other countries take on serious measures[75] and until Japan and the USA ratify the agreement. The EU as a whole is unwilling to take action until other Western countries also take action.[76] Furthermore, as mentioned earlier, the US senate will not ratify the agreement until key developing countries adopt meaningful action.[77] (The key developing countries refer to Argentina, Brazil, China, India, and some other large countries). This implies that the leadership role of the North has become conditional, especially since the developing countries negotiated on the understanding that the developed countries would take action first.[78] Considerable pressure was put on the developing countries in Kyoto to make them accept the now excluded article on voluntary measures to be adopted by developing countries. Since then the USA has been sending missions to various developing countries—the Summit of the Americas, China, South Korea, the ASEAN, and G-7 summit—to discuss this issue.[79] While Brazil, China, and India continue to argue that the targets of developed countries should not be linked to developing country participation, Argentina and Kazakhstan announced at the fourth meeting of the Conference of the Parties that they would be willing voluntarily to accept commitments. Although the USA subsequently signed the Kyoto Protocol, ratification does not appear likely in the coming year. Ratification politics appears thus to be one major short-term hurdle.

Having said that, one could also argue that ratification politics does not need to be an insurmountable problem. Clinton himself said, 'I want to emphasize that we cannot wait until the treaty is negotiated and ratified to act.'[80] If industry picks up the signals and begins to invest in new technologies, if civil society engages in social discussion on how best to reduce greenhouse gas emissions, if Europe can build up the courage to develop its strategy to reduce its greenhouse gas emissions, then the process of ratification becomes easier a few years down the road. I would also argue that it does not make sense for the northern countries to make their ratifications dependent on the 'meaningful participation' of developing countries. The reason is simple. Past experience reveals that developing countries (and sometimes the countries with economies in transition) tend to be in non-compliance with their international commitments because, in general, they lack suitably equipped national organizations. Research by Jacobson and Weiss (1995), Peter Sand (1992), and Robert Keohane (1993) shows that the incapacity of states is a critical reason for non-compliance.[81] Without a strong domestic enforcement mechanism, governments in the developing countries may have just nominal power and no real effective strength, especially in relation to environmental issues. So even if there is the desire to meet international obligations expressed by the government, if the institutional basis for executing that desire is inadequate, the treaty will not be implemented. This has been recognized by many governments and several international documents, including Agenda 21,[82] which recommends that assistance should be given to the developing countries and countries in transition to a market economy to build institutional capacity in their countries.

The UNFCCC, too, includes several articles related to scientific co-operation, technological co-operation, and financial assistance. Even the commitment of Argentina may have some financial implications for the USA.[83] The point I am trying to make here is that forcing developing countries to take on voluntary commitments unnecessarily makes breaches in diplomatic relations without achieving the necessary results. A Brazilian professor is only one of the many developing country representatives who see diplomatic pressure as 'using, once again, an international agreement as a tool of North–South domination'.[84] Instead one could adopt the advice of Michael Marvin of the US Business Council for Sustainable Energy: 'Start early and start small and lead with the expectation of being followed by the developing countries.'[85]

However, it would not be out of place to make another point here. While it is very understandable that developing countries feel that the developed countries should take action first and should not burden the already over-burdened developing countries with new responsibilities, and while it makes sense for them to negotiate defensively in this context, I would argue that developing countries need to consider the long-term consequences of their defensive strategy. Projections indicate that the emissions from developing countries will continue to grow, and that developing countries will also be most vulnerable to the impacts of climate change.[86] Against this context, developing countries need to put the issue of how to develop, and at what cost, onto their own domestic agenda, and they need to mobilize domestic civil society to start thinking of the best ways to address these issues.

A second key horizontal challenge is to ensure that the international co-operative mechanisms established under the Kyoto Protocol are successful. Unlike the issues of monitoring and verification, which can probably be creatively addressed by scientists and policy makers, the issue of allocating emission allowances to countries and allowing them to trade will be complicated. While Schelling (1997) claimed that 'one cannot envision national representatives calmly sitting down to divide up rights in perpetuity worth more than a trillion dollars',[87] the Kyoto Protocol made an attempt at allocating rights among the developed countries—much to the annoyance of several developing countries. Agarwal and Narain (1998) argue that the Kyoto Protocol is unfair because it has not taken global equity aspects into consideration.[88] They propose the principle of an equitable sharing of assigned amounts of greenhouse gas emissions as the only fair basis for developing the regime further. Others have proposed that northern emissions should contract to allow the emission levels of all countries eventually to converge.[89] Cooper (1998) anticipates this as a long-term problem, stating that, although giving emission budgets to countries is an elegant solution, the commitments under the Kyoto Protocol will be unimplementable because they raise the problem of international allocation of emission rights.[90] This is because, as Bodansky pointed out in 1993: 'On the one hand, if the per capita or per unit GDP target were set at a level that would stabilize global emissions, countries that have higher than average emission rates, like the US, would have to reduce their emissions substantially; such a target would therefore be politically infeasible. On the other hand, if the target were made high enough to make it acceptable to the United States, then global emissions could increase substantially as states with low emission rates increase theirs to US levels.'[91] Apart from these issues, there is the problem of 'hot air' discussed earlier. There are several authors who argue that the high allocations of assigned amounts to some Central European countries whose emissions are unlikely to reach such a level imply that emission trading may in effect not lead to any real reductions.[92] Then there are the concerns about ensuring that the emission reductions generated in all three co-operative mechanisms—i.e. joint implementation, the Clean Development Mechanism, and emissions trading—are compatible and tradable.[93] Furthermore, some researchers argue that the criteria in these co-operative mechanisms will tend to exclude Africa, as over the last few years only two Activities Implemented Jointly projects have been developed there.[94] There is also a key domestic dimension to the emissions trading issue. How are governments going to divide the permissible emission levels among different producers and consumers? While some favour an auction system, others incline towards the 'grandfathering' system, which allocates emission entitlements on the basis of current pollution levels. Interviews with European and American negotiators indicate that the domestic allocation of emission entitlements is likely to be a major challenge. Tom Spencer, a member of the European Parliament, concludes: 'The existing text on emissions trading offers as many opportunities for fraud and dishonesty as the common agricultural policy.'[95] All these issues indicate that the global community has a very challenging task ahead to develop a legitimate and fair system of co-operation, which creates a new legal tender—emission reduction units or certified emission reductions.

Another major hurdle is the risk of vertical standstill. In 1996 I had argued that, if there is limited local concern, national policy tends to be symbolic, and this leads to rhetorical foreign policy; moreover, such rhetorical foreign policy could make the international regime into a farce.[96] Interviews reveal that within Europe there is a serious concern about the domestic acceptance of emission reduction measures. Negotiators from Europe, the USA, and Japan feel that they have very little domestic support for far-reaching emission reduction measures at home.[97] Earlier research had indicated that, in most developing countries, the issue

of climate change is barely on the national political agenda, even though it may be on the formal agenda.[98] In the small island states the climate change issue is on the agenda, but they are hardly in a position to reduce their already low domestic emissions.

On the other hand, there are signs that the public is not indifferent to the issue of climate change. A poll conducted by Louis Harris and Associates indicates that 75 per cent of US voters support the climate change treaty.[99] Another survey conducted by Ohio State University indicates that 80 per cent of Americans believe that reducing air pollution will reduce global warming.[100] A Mellman Group poll indicates that 72 per cent of the US respondents would accept a protocol with substantial cuts of greenhouse gases by 2005.[101] The prime minister's office in Japan conducted a poll that indicated that 79.6 per cent of the respondents support legal regulations to reduce emissions of carbon dioxide.[102] While these polls are quite positive, the above-mentioned interviews with European, American, Japanese, and Canadian negotiators last year indicated that these policy makers are not aware of this support, or are afraid that the public will not endorse their policies.[103] This may indicate that there is a communication gap between the general public and government officials, a relatively easy problem to address. Or, and more seriously, it could indicate that the results of these polls are highly ambiguous. Kempton (1997) argues that, although 72 per cent of US voters may see climate change as a serious threat and 83 per cent would support higher fuel efficiency standards, only 23 per cent would support taxes on energy. He argues that, if one analyses the opinion polls seriously, one sees that those polled are misinformed and 'that most of those polled have not thought about the issue at any length and thus cannot give meaningful responses.' He argues, therefore, for good public awareness campaigns aimed at taking away existing misconceptions rather than providing new information as a critical step for generating legitimate public policy decisions.[104]

Further, although there are indications that some industries are willing to adopt new measures, the hard-liners continue to oppose measures. The chairman of the Global Climate Coalition (GCC), which has about 60 corporations and associations on its board, is noted to have said that any decision to include binding commitments in the Kyoto Protocol would be 'tantamount to Russian roulette'.[105] While the GCC has in a recent document presented estimates of job losses on a state-wise basis going up to 278,000 in the state of California as a result of the Kyoto Protocol,[106] Daniel Lashoff of the Natural Resources Defence Council argues that policies leading to a 10 per cent cut in greenhouse gases by 2010 could lead to 700,000 additional jobs.[107] Interviews with European negotiators and policy makers also indicate that there is a great degree of uncertainty as to whether climate change will lead to job losses or not.[108] In developing countries the chief concern is that action to address climate change is likely to curtail economic growth opportunities for these countries.[109]

Despite these concerns, there is a general positive energy emerging from the regime. The issue is on the agenda of the top politicians of the developed countries. GLOBE International, a network of 550 environmentally committed parliamentarians from over 100 countries, particularly Europe, Japan, Russia, and the United States, stated in its press release on 14 November 1998 that 'the obligation is on us parliamentarians to keep the process alive, and ensure that it remains linked to the electorates around the world, rather than cut off in the corridors, couched in the language of economists and bankers . . . we shall work for the rapid ratification of the Kyoto Protocol, which . . . offers opportunities for both industry and the creation of jobs.'[110] Some industries are taking the initiative to reduce their own emissions. General Motors and Toyota are working on a fuel-efficient car, Texaco on a special conversion programme for natural gas. Civil society, churches, and schools are getting involved in the process. Academicians are doing research and writing articles on ways and means to develop the regime further and to implement its provisions. NGOs are building up the pressure. There are thus indications of increasing public support, a partially co-operative industry, an active non-governmental body, and a growing epistemic community.

In the final analysis there is no clear answer to the question whether the climate change regime has the makings of success. The literature is divided; while many lawyers and policy makers hail the international agreements made thus far as successful, in that they send signals to society and industry, they are afraid that lack of political will and the loopholes in the treaties may minimize the total impact.[111] There are environmentalists,[112] academicians,[113] and business NGOs[114] who think that the design of the Kyoto Protocol is faulty in that it focuses on the wrong instruments, although for different reasons or because it is grossly inadequate to meet the goals.[115] Whether it is inadequate or faulty, the Kyoto Protocol and the institutional features in the regime are not irredeemable, and as such they will stimulate a global learning process. This process in itself has the potential of making the regime successful. If the current or future US president can ensure US ratification of the Kyoto Protocol, or if the European Union ratifies and there is strong support from the civil society, there are strong indications that the remainder of the developed and developing world will also do so. A mid-term assessment and the development of new technologies could lead to a renegotiation of targets—after all, this is what happened

in relation to the Montreal Protocol on Substances that Deplete the Ozone Layer. However, the future development of the regime is unlikely to be a smooth and unruffled process. The success of the regime will depend on the extent to which its institutions can change the international discussion from one of economic conflict between countries to one on how best to achieve sustainable development paths which are accessible to all countries. 'If we do it right, protecting the climate will yield not costs, but profits; not burdens, but benefits; not sacrifice, but a higher standard of living.'[116]

Notes and References

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