

1. Reconciling trade rules and climate policies

1.1 THE PROBLEM OF TRADE AND CLIMATE CHANGE

It seems that new reports come out monthly about the urgency with which climate change must be addressed. The reports of the Intergovernmental Panel on Climate Change (IPCC) are perhaps the most famous calls to action but certainly not the only, or most extreme, ones. Climate change is already negatively affecting species and natural systems.¹ These reports suggest major acceleration of such effects if action is not taken. Leaders of large and small countries recently converged on Copenhagen, citing the need for policies and plans and some form of multilateral agreement to replace the Kyoto Protocol. The current debate is about how quickly action is needed and what will be most effective in reducing greenhouse gas (GHG) concentrations and the impact of climate change on the environment, including humans. Unfortunately, despite the scientific consensus and the apparent political recognition of the need to cooperate to reach a solution, action has fallen far short of what scientists claim is needed to reduce the probability of dangerous impacts on the planet and human civilization.

In this debate international trade and 'globalization' seem often characterized as a key source of the problem. However, we believe that this is both wrong and unhelpful – that there are important ways in which both trade and action on climate policy can work together to reduce the risks from climate change and to foster development. Most obviously perhaps, the movement of goods itself by ships, rail and truck creates GHG emissions. Moreover, the extent of economic growth and the emissions attendant on growth, such as from the production of electricity or other forms

¹ IPCC, *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Geneva: IPCC, 2007) (IPCC FAR (2007)). See also International Scientific Steering Committee, *Avoiding Dangerous Climate Change: International Symposium on the Stabilization of Greenhouse Gas Concentrations* (Exeter, 2005).

of energy, are seen as the source of the rise in GHG emissions and a major obstacle to their reduction. International trade has led to increased economic growth and emissions in developed countries. Economic growth from trade by developing countries, and particularly large countries such as China and India, threatens to cause increasing emissions in the future. To the extent that World Trade Organization (WTO) rules support continued liberalization and growth of international trade, these rules have come to be seen as part of the problem.

At the same time, however, climate change policies are seen as harming trade and economic growth. Climate policies may impose high costs on industry, potentially reducing the competitiveness of these industries in an increasingly integrated global economy. This concern also implicates developing countries. They worry that while developed countries grew rich through carbon-intensive economies, they themselves will be denied the ability to grow and help their citizens out of poverty by strictures on GHG emissions. These concerns about the fairness of climate policies have been obstacles to international action.

In this book, we take a more optimistic view of the connection between international trade and action on climate change. We seek to find solutions that both foster trade (and a rules-based trading system) and support the goal of tackling climate change. The theme of this book is that there are *synergies* between trade and climate policies that can lead to more efficiently addressing climate change. In fact, we see three inter-related goals that policy-makers must focus on and which, through the manner in which they reinforce each other, have the potential to increase social welfare. These goals are mitigating climate change, deterring protectionism, and furthering the development goals of developing countries.

1.2 CLIMATE CHANGE, PROTECTIONISM AND DEVELOPMENT

The first goal of *mitigating climate change* arises because of the nature of the causes of climate change.² The global average temperature has been rising over the past century with most of this increase 'very likely' due to man-made increases in GHG emissions.³ The impacts of climate change depend on the size of the increase in average temperatures. The policy goal

² See Chapter 2 for a more detailed discussion of the theory relating to mitigating climate change and fostering trade and development.

³ IPCC, *supra* note 1.

of maintaining an average temperature rise of below 2 degrees Celsius has been set by scientists and is reflected in the 2009 Copenhagen Accord.⁴

In order to restrict temperature increases to this level, policies will have to address the key causes of GHG emissions. Climate change is a large-scale externality – a market failure in which individuals who create GHG emissions through such activities as driving cars or using electricity generated from coal obtain the benefits from the activities.⁵ However, the costs in terms of climate change are imposed on others – largely either future generations or individuals in other countries. Governments need to choose instruments to address this market failure, such as taxes, regulations, emissions trading, or even informational remedies.

The second goal – that of *detering protectionism* – relates to the nature of trade and its connection to social welfare. Economic efficiency is maximized with liberal trade as goods are supplied by the most efficient producers regardless of where they are located. However, governments may put in place tariffs and other protectionist measures in order to placate concentrated interests such as import competing industries.⁶ One goal of trade rules then is to reduce protectionism to the extent possible in order to maximize economic efficiency.⁷

⁴ Available online at <http://unfccc.int/resource/docs/2009/cop15/eng/07.pdf> (date accessed: 22 January 2010). It should be noted that 193 signatories to the UN climate convention – those represented in the Alliance of Small Island States, the Least Developed Countries, and the Africa Group – all warned at the Copenhagen Conference of the Parties in December 2009 that 1.5 degrees is the absolute limit and that 2 degrees would mean hardship, mass migrations, and even death for many of their citizens. Bridges Copenhagen Update, 'High-level Politics Meets Low Ambition: Taking Stock of COP15' (International Centre for Trade and Sustainable Development, Geneva, 2009).

⁵ N. Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2007).

⁶ As discussed in Chapter 2, there are some potentially welfare enhancing rationales for trade barriers or measures but the general case is that trade barriers reduce economic efficiency. See Michael Trebilcock and Robert Howse, *The Regulation of International Trade*, 3rd edn (London: Routledge, 2005).

⁷ Protectionism, as noted by Levy, tends to be seen as anything other than advocacy of free trade. Levy suggests treating protectionism as the advocacy of policies that are intended to favour domestic producers over foreign exporters. He classifies three types of protectionist measures: (1) intentional protectionism, where measures are explicitly intended to favour domestic industry over imports; (2) incidental protectionism, where measures can be justified on other grounds but also have the effect of obstructing import competition; and (3) instrumental protectionism, which describes a growing set of policies in which trade actions are used as a lever to change another country's policies. Philip I. Levy, 'Protectionism in the Global Economy' (2009) *Georgetown Journal of International Affairs*.

Finally, economic prosperity and growth in standards of living have not been evenly distributed around the world. There is clear inequality in income and standards of living both in and across countries, with many countries' citizens living in abject poverty.⁸ The third goal we want to emphasize is therefore the need for *further development* in order to raise standards of living around the world. The standard of living can and should be measured in a range of ways beyond mere income per capita, such as through examining whether individuals have the capabilities necessary to live lives they have reason to value.⁹ Development cannot therefore be equated directly with economic growth or trade but economic activity is an aspect of human freedom, particularly as a means of fostering other goals (such as health and education).

Synergies between trade rules and climate change policies arise from the interactions of trade rules, economic growth and measures to address climate change. Trade rules not only provide scope for individual countries to meet their own targets for mitigating climate change but may also help governments facing domestic opposition. For example, a key concern with government action addressing climate change is that it will impose costs on domestic industry, making them uncompetitive compared with industries in countries that have not taken action. Under WTO rules, the cost of some of these measures can be imposed on imports and rebated to exports, helping to overcome domestic opposition to climate policies. There are, of course, difficulties with these measures; they are difficult to apply fairly and can harm relations with the countries facing the measures.¹⁰ However, they can play some role in addressing domestic political economy concerns.

Further, trade rules attempt to ensure that countries do not put in place measures that are ostensibly aimed at addressing climate change but instead, in whole or in part, are intended to protect domestic industry at the expense of foreign producers. Countries' climate policies are in theory constrained by WTO rules from harming trade flows that may provide not only economic growth but also greater environmental benefits. For example, to the extent Brazilian ethanol is cheaper and more environmentally beneficial over its life cycle than US corn-based ethanol, WTO restrictions on protectionist measures that deny Brazilian access to US markets can aid economic growth and the effort to address climate change.¹¹

⁸ Jeffrey D. Sachs, *The End of Poverty: Economic Possibilities for Our Time* (New York: The Penguin Press, 2005).

⁹ Amartya Sen, *Development as Freedom* (New York: Knopf, 1999).

¹⁰ See Chapters 8 and 13.

¹¹ See, for example, Doaa Abdel Motaal, 'The Biofuels Landscape: Is There a Role for the WTO?' (2008) 42 (1) *Journal of World Trade* 61.

Trade rules therefore need not constrain efficient domestic action and may help governments to overcome political economy constraints on action. They can also address climate change by providing scope for countries to take measures to deter other countries that are not addressing climate change. Addressing climate change is an additive public good – that is, a public good that results from reducing the combined emissions of countries.¹² The more countries (and especially large emitters) take action, the greater the public good. However, like all public goods, parties may try to 'free-ride' on the actions of others. They want to benefit from other countries' emission reductions but do not want to bear the costs of taking action themselves (for example, sacrifices in lifestyle or economic activity). Such free-riding could manifest itself as countries not joining up to climate change regimes or not complying with commitments made under such regimes. As discussed further in Chapter 3, while there are only two countries that did not ratify the Kyoto Protocol (the US and San Marino), there are many others that have no emission reduction commitments or are unlikely to meet the commitments they do have. Trade measures such as border adjustments and even import bans can reduce both non-participation and non-compliance, leading to increases in the public good. These measures can be taken unilaterally by individual countries or be part of a multilateral agreement. Regardless of their source, they can be an effective tool in reducing free-riding. Current trade rules provide scope for their use, but, as with the use of measures to address domestic political economy barriers to climate action, they raise tensions and potential fairness issues with respect to the target countries.¹³

Trade measures therefore can help countries meet their own domestic targets and induce others to participate in the effort to address climate change. Trade can also help overcome concerns about the impacts of climate change measures on developing countries. This theme ties in with concerns about the fairness of any attempts to address climate change. A sticking point in the international climate change negotiations has been

¹² Scott Barrett, *Why Cooperate? The Incentive to Supply Global Public Goods* (Oxford: Oxford University Press, 2007). A public good is one whose benefit is shared by either the public as a whole or a sub-group thereof. It has two characteristics that are the opposite of those defining private goods: (i) it is impossible or too expensive for the supplier to exclude those who do not pay for the benefit (non-excludability); and (ii) consumption by one person does not leave less for others to consume (non-rivalrous competition). Richard D. Smith et al., *Global Public Goods for Health: Health Economics and Public Health Perspectives* (New York: Oxford University Press, 2003) at 4.

¹³ See Chapters 13 and 14.

that developed countries argue that, as noted above, addressing climate change is an additive public good so all countries, including developing countries, need to take action. Developing countries, on the other hand, argue it is unfair that developed countries grew economically on the basis of GHG emissions, whereas now developing countries are being asked to constrain their own growth by the need to reduce emissions.

WTO rules, in theory at least, hamper attempts by developed countries to use climate change measures in a manner that protects their own industries at the expense of industries in developing countries. Limiting such protectionism can at a minimum ensure that any action to address climate change is taken with the least possible impact on developing countries. Further, trade rules can provide for positive measures to benefit developing countries. Developed countries can, for example, provide preferences to imports from developing countries as an incentive for developing countries to take climate change action. Such measures can be used to enhance the economic opportunities for developing countries in the context of climate change.

1.3 KEY INTERACTIONS

These themes, of synergies and of fairness and development, implicate the current WTO rules including both how they are drafted and how they should be interpreted. We will discuss these rules in the context of three key ways in which trade and climate change policy interact: (i) in countries' use of climate policies to address their own emissions; (ii) in countries' use of unilateral action to induce other countries to take action on climate change; and (iii) in multilateral solutions to climate change.

1.3.1 Implications of Trade Rules for Domestic Climate Policy

Any domestic policy that imposes costs on or provides benefits to domestic industries, or provides some barriers to imports, raises concerns about conflicts with WTO rules, as one of the main roles of the WTO rules is to reduce unnecessary barriers to trade. These domestic policies do not have to favour domestic industry explicitly or intentionally harm foreign producers. Much of the conflict between trade rules and domestic policies will arise in the context of policies that appear neutral as between domestic and foreign producers but which other countries argue implicitly harm their producers. For example, a tax on all high emission cars, whether domestic or foreign, appears neutral but what if the rule results in the domestic cars facing a much lower average tax than imports? Depending on how

WTO rules are interpreted, governments may be limited in the policies they can adopt. The first set of issues relates to this interaction of domestic climate policies and trade rules: do trade rules constrain countries' ability to address climate change? Conversely, can trade measures help countries implement climate change policies (such as by helping overcome domestic opposition by addressing competitiveness concerns)?

1.3.2 Unilateral Measures to Induce Other Countries to Take Action on Climate Change

Given that addressing climate change is a public good, countries will be concerned that if they take action, other countries will simply free-ride on their efforts and take no action themselves. Countries may therefore wish to use trade measures to either force or provide incentives to these other countries to take action. For example, countries could impose a tax on imports from countries which have not adopted climate policies. Alternatively, they could afford tariff preferences to countries that do take climate action. Trade rules will determine the scope for such unilateral action. The second set of interactions therefore relates to the extent to which unilateral trade measures can be used for this purpose. If they can, should they?

1.3.3 Multilateral Solutions

The final set of issues concerns multilateral solutions. The Kyoto Protocol was an attempt to build multilateral action on climate change. However, it did not initially include any means to force countries that are not signatories to adopt the Protocol or, indeed, even to ensure parties that did adopt the Protocol meet their commitments. The enforcement mechanisms that were eventually adopted have been described as too weak to be effective.¹⁴ Other multilateral environmental agreements such as the Montreal Protocol on Ozone Depleting Substances have used trade measures to back commitments or to induce non-participants to join the agreement. Such measures include bans on the trade in products from these non-parties that have been made with ozone depleting substances. This last set of issues therefore asks whether trade measures can and should be built into any post-Kyoto climate change regime.

¹⁴ Barrett, *supra* note 12, and Robert N. Stavins and Scott Barrett 'Increasing Participation and Compliance in International Climate Change Agreements' (Fondazione Eni Enrico Mattei Working Paper No. 94.2002; Kennedy School of Government Working Paper No. RWP02-031, 2002).

1.4 THE ROLE OF INSTITUTIONS

Institutional design issues are central to any discussion of the relationship between trade rules and climate change. Domestic climate policies are made by governments that are more or less representative of their citizens. WTO rules are made and interpreted under a set of international institutional rules. The content of any international climate change agreement will depend on the institutional arrangements for its negotiation. Each of these sets of institutions confers power on different groups or individuals.

Decisions about which climate policies to adopt involve complex economic, political and ethical choices. The set of institutions making these decisions in large part determines how these choices will be made, and whose preferences and values prevail. Allowing domestic governments alone to decide on the appropriate policy raises the spectre of the use of such policies to protect domestic industry at the expense of foreigners. Allowing the WTO dispute resolution body to decide raises fears that it will not adequately consider the views and values of different countries or of the environment. Permitting decisions to be made in multilateral negotiations potentially allows broad deliberation about the appropriate approach to a global issue, but gives rise to concerns about consideration of the interests of under-represented or non-represented countries or groups such as developing countries.

This book will therefore focus on how WTO rules and the interpretation of those rules by panels and the WTO Appellate Body determine whose values prevail and possibly the quality of the resulting decisions. Not all bodies have the same information or the same ability to assess the information – domestic governments, for example, may have a greater ability to assess local values and conditions. Each type of institution (domestic government, multilateral international body, international dispute resolution body) therefore puts a different emphasis on legitimacy and competency. We will discuss how the choice of institutions impacts the potential synergies of trade and climate policies as well as the possibilities for using trade to enhance fairness and development opportunities in the climate change context.

1.5 OUTLINE OF THE BOOK

The framework of this book generally flows from the three key interactions between trade and climate change set out above. Before getting to these interactions, however, Part II sets the stage for the discussion. Chapter 2 discusses in greater detail the underlying concerns about both climate

change and international trade. It focuses on the 'public goods' nature of climate change and the free-riding to which it gives rise. It also discusses how trade agreements arise because of an underlying prisoners' dilemma in which countries that would benefit from more liberal trade need to reach some form of credible agreement to ensure that other parties do not cheat on their commitments. We then use this discussion of the nature of climate change and trade to address why countries enter into international agreements and the underlying constraints on such agreements. International agreements must be self-enforcing as there is no overarching authority or government to make and enforce these agreements. This self-enforcing nature gives rise to a difficult balance between participation and enforcement – stronger enforcement may, in certain circumstances, lead to fewer countries being willing to participate or, if they do participate, to take on significant obligations.¹⁵ Who makes the agreements, how free countries are to make their own policies, and how these agreements are enforced all raise difficult institutional questions of legitimacy and competence.

Chapter 3 then provides a basic overview of the current WTO and climate regimes. Following this, Chapter 4 discusses the three main interactions between these regimes and between these regimes and domestic policies: (i) the relationship between international trade rules and domestic climate policies; (ii) the scope for unilateral action by countries against countries they feel are not meeting their responsibilities to address climate change; and (iii) the potential inclusion of trade measures in a multilateral climate agreement.

Part III begins the analysis of these interactions by focusing on the relationship between WTO rules and domestic climate policies. Governments can use a range of policies to address climate change including regulatory measures or emissions trading schemes, taxes, subsidies and border measures. This part is largely structured around these instrument choices. Each chapter begins with a discussion of why the instrument may be useful in addressing climate change and then analyses the interactions between these instruments and WTO rules. Chapters 5 and 6 primarily discuss the potential constraints of WTO non-discrimination rules on the use of regulatory measures and emissions trading or taxes, respectively. The WTO Appellate Body has altered its interpretation of these rules over time, most recently potentially increasing scope for domestic environmental policies. Chapter 7 focuses on subsidies that fall under a different, much more stringent set of rules. These rules significantly constrain the ability of countries to use subsidies to address climate change. Finally, Chapter 8 addresses

¹⁵ Barrett, *supra* note 12.

border measures such as applying taxes to imports or rebating taxes on exports. While there is some scope for the use of such border measures, the WTO rules in this area are unclear, giving rise to potential conflicts in the future if countries attempt to use them to address concerns about the competitiveness of their industry. There are also significant fairness concerns as regards their use with respect to developing countries.

While WTO rules might constrain certain uses of these instruments, there are some exceptions to these rules under WTO agreements. Chapter 9 focuses on the ability of countries to use these exceptions to justify their climate policies. In particular, it discusses the scope of Article XX of the GATT, which provides a list of grounds on which countries can base policies that otherwise violate WTO rules (such as those requiring non-discrimination). While Article XX does not provide an explicit broad environmental exception, it does permit measures that are 'necessary' to protect human or animal life or health, as well as measures relating to the conservation of exhaustible natural resources. The WTO Appellate Body has recently interpreted these provisions, along with the provisions of Article XX relating to how the measures are applied, in a manner that provides greater scope for domestic climate policies.

Chapter 10 draws together these discussions of instruments, rules and exceptions and their implications for which set of institutions should prevail. It discusses the lack of flexibility and certainty under current interpretations. It also sets out the concerns with the fairness and accessibility of the dispute settlement system. There is evidence that developing countries have difficulty effectively using the process because of the nature of the system and the available remedies. These difficulties impact not only the connection between WTO rules and domestic policies but also the other interactions discussed in Parts IV and V. This chapter then addresses the approach panels and the Appellate Body can and should take to reviewing decisions made by domestic governments. To what extent do they defer to domestic decisions or, conversely, do they second-guess these decisions and make the ultimate decisions themselves? The Appellate Body has struggled, and continues to struggle, to find the appropriate balance between deference and review.

Part IV turns to the second interaction between trade rules and climate policies – the extent to which countries can use unilateral measures to induce other countries to take action on climate change. Chapter 11 examines whether countries can use trade measures to provide positive incentives to other countries to take action on climate change. Such measures could include trade preferences to imports from countries not currently taking action as well as investment and subsidies or technology transfers to these countries. There is some scope for these measures under WTO

rules, although less than perhaps commonly believed. Chapter 12 briefly turns to removing roadblocks that may be preventing countries taking climate change action. To the extent countries are concerned about loss of competitiveness of their industries relative to countries not taking action on climate change, the rules initially discussed in Part III (for example those relating to border adjustments) have a role to play. Chapter 13 discusses the thorny issue of using unilateral measures as 'sticks' to force other countries to adopt climate policies. These unilateral measures include bans on imports and punitive tariffs. They also encompass one of the most controversial issues in the trade and environment area – the ability of countries to put in place internal or border measures that relate not to the product itself (for example, the emissions from a car) but to how the product was made (for example, the GHG emissions from the electricity generation facility used to power the factory where the other country's car was manufactured). Part of the difficulty comes from the challenge of designing trade measures that are severe enough to cause action by other countries and yet not so severe to the country imposing them that they cannot be credibly threatened. There is also a concern about forcing countries to follow the values of citizens of other countries.

Part V addresses the final area of interaction between trade rules and climate change policies – multilateral solutions to climate change. Chapter 14 analyses the desirability of recent calls to include trade measures in a post-Kyoto multilateral climate change agreement. Trade measures can reduce both non-participation in and non-compliance with international agreements. Using trade measures in a multilateral agreement may also increase the fairness of attempts to induce participation in addressing climate change internationally as compared with the unilateral measures discussed in Part IV. However, there are risks, including that those inside the regime will use the measures in a manner that unnecessarily harms those on the outside. Chapter 15 will examine the other approach – that is, rather than trade measures being included in a climate change agreement, trade agreements could take greater account of climate change. For example, trade agreements could provide greater scope for trade in environmental goods and services or transfers of environmental technologies.

Part VI draws out the lessons we take from the prior chapters and the institutional reforms they point towards. We argue that the discussion of the interactions between climate change policies and trade rules supports our themes of synergies and of fairness. The stark characterization of trade as antithetical to the global struggle against climate change is inappropriate and, moreover, unhelpful. In order to combat climate change in the most effective and fair manner, trade is essential. Trade rules and

institutions must continue to adapt to ensure environmental values are not lost in the search for more liberalized trade – but not to use them to foster climate action would be to neglect an important lever at a time when urgent action is needed.

PART II

Linkages between trade and climate change

2. Climate change, trade and international agreements

2.1 CLIMATE CHANGE AS AN ADDITIVE PUBLIC GOOD

Climate change is occurring. In its 2007 Fourth Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) adopted a very strong statement concerning the existence and cause of climate change. It stated that 'Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.'¹ These findings have since been confirmed and extended by further studies, including updated observations of recent changes in climate, better attribution of observed climate change to human and natural causal factors, improved understanding of carbon-cycle feedbacks, and new projections of future changes in extreme weather events and the potential for catastrophic climate change.² The increase in greenhouse gases (GHGs) in the industrial era is unprecedented in more than 10000 years. The global average atmospheric concentration of carbon dioxide has increased enormously since the beginning of the Industrial

¹ Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: Synthesis Report: Summary for Policymakers* (Fourth Assessment Report, available online at: www.ipcc.ch).

² The *World Development Report 2010* cites H.M. Fussler, 'The Risks of Climate Change: A Synthesis of New Scientific Knowledge Since the Finalization of the IPCC Fourth Assessment Report', Background note for the WDR 2010, and V. Ramanathan and Y. Feng, 'On Avoiding Dangerous Anthropogenic Interference with the Climate System: Formidable Challenges Ahead' (2008) 105(38) *Proceedings of the National Academy of Sciences* 14245-50. In the World Bank, *World Development Report 2010: Development and Climate Change* (Washington, DC: The World Bank, 2010) at 76. There has been a recent backlash against the finding of human-induced climate change, in part fuelled by a set of emails relating to climate change data. For a sceptical view, see, for example, Bjorn Lomborg, *Cool It* (New York: Knopf, 2007) (arguing that while humans are responsible for climate change, many claims of climate activists are 'wildly exaggerated').

Revolution. In the twentieth century alone, the carbon dioxide concentration increased from around 280 parts per million (ppm) to 387 ppm.³ Moreover, it is 'very likely' (that is, greater than 90 per cent certainty) that this increase is attributable to human activity, mostly from the burning of fossil fuels, but also due to deforestation and changes in land use.⁴ The question is: why is it happening?

2.1.1 Emissions and Externalities

GHG emissions arise because of what Sir Nicholas Stern has called 'the greatest and widest ranging market failure ever seen'.⁵ For markets to work efficiently, individuals must make choices based on all the costs and benefits of their actions. They maximize their own welfare taking into account their preferences (such as for driving) along with these costs and benefits. With full information, overall welfare will increase as individuals take actions for which the benefits are greater than the costs.

In the climate change context, individuals receive the benefits of activities which emit GHGs such as driving cars, using electricity generated with fossil fuels, and flying in airplanes. They do not, however, bear the full costs of these activities.⁶ Climate change is occurring but it is not occurring everywhere to the same degree. Some areas of the world, particularly those in the developing world, are being hit harder than others. They are experiencing droughts or floods, loss of species and other harms. Many developed countries, on the other hand, are experiencing fewer directly apparent impacts.⁷ Individuals, particularly in developed countries,

³ *World Development Report*, *ibid*.

⁴ IPCC, *supra* note 1. The combustion of coal, oil, and natural gas contributes around 80% of the carbon dioxide emitted annually, with land-use changes and deforestation accounting for the remaining 20%. In 1950 the contributions from fossil fuels and land use were almost equal but since then energy use has grown by a factor of 18. Concentrations of other GHGs, including methane and nitrous oxide, have also increased significantly as a result of fossil fuel combustion, farming and industrial activities, and land-use changes. *World Development Report*, *ibid*. at 71–2.

⁵ N. Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2007).

⁶ Costs in this sense include not only financial but also social and environmental costs.

⁷ Of course, developed countries also are experiencing and will experience the direct and indirect effects of climate change. See, for example, Andrew T. Guzman and Jody Freeman, 'Sea Walls Are Not Enough: Climate Change and U.S. Interests' (2009) *Columbia Law Review*.

obtain the benefits of driving or flying but the cost is shifted to others. The result is that they engage in too much of these types of activities.

There is a further aspect to the externality that makes it even more troublesome. GHGs are emitted into the atmosphere and remain there for a long time. The atmospheric lifetime of carbon dioxide is estimated to be between 50 and 200 years. This means that carbon dioxide entering the atmosphere today could remain there until 2210.⁸ The emissions today, therefore, will impact individuals in the future – perhaps many generations in the future. Individuals receive the benefit of flying or driving today but the costs are spread far out into the future, making the externality even worse. Again, since they do not face the cost, they will over-indulge in GHG-emitting activities.

Climate change can therefore be seen as the result of a negative externality. Individuals making choices receive the benefits but impose the costs on others – in their own and other countries and in future generations. Markets and individual choice do not work efficiently if individuals act in a purely self-interested and self-centred fashion and if some costs are not fully borne by the individual making the decision.⁹ Individuals may act in a non-self-interested fashion in some cases. For example, they may act because of norms or values such as a concern for the fairness of their choices or for the environment itself.¹⁰ These norms may be enforced by others, such as where neighbours express disapproval of someone who drives an SUV. Norms or values may also be internally enforced, where an individual has a feeling of guilt at not making climate friendly choices. If these norms or values are insufficient or non-existent, governments may

⁸ Climate and Ozone Depletion Teaching Pack, Atmosphere, Climate and Environment Information Programme, Teaching Pack, aric, Manchester Metropolitan University (available online at: www.ace.mmu.ac.uk, date accessed: 1 February 2010). By contrast, the warming effect of methane emissions lasts for only a few decades, while that of aerosols lasts for only days to weeks. *World Development Report*, *supra* note 2 at 72.

⁹ An individual is self-centred and self-interested if she chooses to maximize her own welfare in a way that is not affected either by the interests of others or by moral issues such as fairness. See, for example, A. Sen, *Rationality and Freedom* (2002), at 30 and 213. Sen argues that rational choice has tended to view individuals as having three types of private reasons for acting: (i) self-centred welfare (an individual's welfare depends on her own consumption); (ii) self-welfare goal (the individual's goal is to maximize her own welfare); and (iii) self-goal choice (an individual's choices are guided by meeting her own goals).

¹⁰ See A. Green 'You Can't Pay Them Enough: Subsidies, Environmental Law and Social Norms' (2006) 30 (2) *Harvard Environmental Law Review* 407, which discusses the relationship between rational choice theory and social norms and values in individuals' choices relating to climate change.

take action to overcome the externality. For example, governments may impose a tax on individuals that makes them face the full cost of their choices or put in place regulatory measures that limit choices.

2.1.2 Why Do Countries Act?

If individuals choose activities that emit too much GHG, why do countries choose to adopt or not adopt either domestic or international policies about climate change? What determines whether or not they act to address the externality? To understand countries' choices about climate change, we need to take a step back and briefly discuss why countries take any action. One view of why countries act is that they make choices in the same way as individuals; they choose policies that are in their own best interests based on a rational balancing of the relevant costs and benefits of different policies.¹¹

However, it is clearly not so simple. Even on this rational choice view of state action, there are different possible notions of 'self-interest' and questions as to whose self-interest is relevant to the particular policy choice. One view is that government policy-makers make choices that foster the welfare of their country and its citizens as a whole. These policy-makers choose what they perceive to be in the public interest for the country.¹² There are of course different ways that this 'public interest' can be ascertained. Policy-makers may simply make decisions technocratically based on their own view of the benefits and costs and what is in the best interests of the nation. Alternatively, they may aggregate the preferences of all the citizens of the country over the particular issue and make the choice that maximizes the net benefits. They may even undertake a deliberative process in which citizens discuss the policy options and come to some set of shared preferences and choices. The process and institutional arrangements that are used to determine the public interest will be important to the legitimacy of the choice and, as we will see in subsequent parts, the strength of the arguments for WTO decision-makers to defer to these choices.

Conversely, instead of policy-makers aiming to foster the national

¹¹ See, for example, Alan O. Sykes, 'International Law', in A. Mitchell Polinsky and Steven Shavell (eds), *Handbook of Law and Economics*, Vol. 1 (Amsterdam: Elsevier, 2007), discussing the rational actor model of state behaviour. For the strong form rational choice view of state action, see Jack L. Goldsmith and Eric A. Posner, *The Limits of International Law* (Oxford: Oxford University Press, 2005).

¹² See Robert Baldwin and Martin Cave, *Understanding Regulation: Theory, Strategy, and Practice* (New York: Oxford University Press, 1999) at 19.

welfare, they may be seeking to further their own welfare.¹³ For example, legislators may make policy decisions based on which interest groups are more willing to provide them with rewards for those decisions. These may come in the form of funds for re-election or future job opportunities. This 'public choice' or political economy view of state decisions raises concerns about the relative power or resources of groups within a state.¹⁴ Concentrated groups sharing a common interest, such as industrial associations, are often argued to have greater power than more diffuse groups such as consumers or citizens more generally. Concentrated groups face greater costs from any policy (such as the costs of complying with an emissions regulation) and tend to have greater resources to organize and provide incentives to policy-makers. Further, these concentrated interest groups generally have lower costs of organizing because they have fewer members than more diffuse groups. As a result, concentrated groups may be better positioned to steer policy in their favour and away from the public interest. This political economy view of how states make decisions raises concerns about the WTO decision-makers deferring to government decisions. It is not clear that deferring to such decisions will be in the best interests of the members of the WTO as a whole, let alone the individual member making the policy choice (or its citizens).

On this view, then, states take actions that are in their own self-interest, in whatever manner that is defined. However, states may also act for other reasons, including the values of their citizens. They may act against their narrowly defined self-interest in order to fulfil other objectives such as a concern for fairness or for abiding by the 'law'. In one sense this may be viewed as an expanded form of self-interest to the extent that individuals within the state have preferences for other-regarding action. Constructivist theories of international law take a broader approach to these preferences, finding a norm-creating function in the formation and processes of international law.¹⁵

¹³ Sykes, *supra* note 11.

¹⁴ In 1971, Stigler wrote a seminal article in which he stated that, as a rule, regulation is acquired by industry and is designed and operated primarily for its benefit. That is, industry 'captures' the regulatory agency and uses regulation to prevent competition. George J. Stigler, 'The Theory of Economic Regulation' (1971) 1 *Bell Journal of Economics* 3. For other material related to public choice theory, see Mancur Olson, *The Logic of Collective Action* (Cambridge, MA: Harvard University Press, 1971), Anthony Downs, *The Economic Theory of Democracy* (New York: Harper, 1957) and Dennis Mueller, *Public Choice III* (Cambridge: Cambridge University Press, 2003).

¹⁵ See Jutta Brunnée and Stephen J. Toope, *Legitimacy and Persuasion in International Law* (Cambridge: Cambridge University Press, forthcoming).

A rational choice model and a norm-based model of why countries act have some similarities. Self-interest may manifest not only through the direct welfare of the state (such as the impact on the economy or the well-being of its citizens) but also through the reputational effects of its actions.¹⁶ A country may, for example, have made a commitment to reduce its GHG emissions by a certain amount. To the extent it does not do so, it may not gain the benefits of the agreement (since other countries may fail to live up to their commitments once the non-complying state's commitment is no longer credible). Further, non-compliance may have impacts in other areas of international cooperation – to the extent the state is seen as not trustworthy in one area, other states may not wish to enter into agreements with it on other issues or may seek a higher price for cooperation. Thus, while under the self-interested model there is generally not seen to be a 'norm' of abiding by law, reputational effects may induce compliance.

In this book, we will primarily take the view that countries are self-interested as it provides a useful framework for analysing the causes and breakdown of cooperation.¹⁷ We will examine self-interest in the sense of both national welfare and public choice. This focus will assist the institutional analysis relating to WTO rules and domestic policies. We will, however, also consider other potential motivations for both countries and individuals throughout the course of the analysis and the connection between processes and norms. Given these potential reasons for why countries take action, we will now return to the question we asked earlier – why do countries take or not take action on climate change?

2.1.3 Climate Change, Public Goods, and Free-riders

As with individuals, GHG emissions from countries arise because of an externality – the country obtains the benefits of the GHG emitting activity but does not bear the full costs and therefore engages in too much of the activity. There is more to this problem unfortunately. Addressing these emissions and the impacts of climate change is a global public good. As

¹⁶ A. Guzman, 'The Promise of International Law' (2006) 92 *Virginia Law Review* 533 (noting that reputation turns one-shot games into repeat games and allows cooperative solutions to problems) and Andrew T. Guzman, 'Reputation and International Law' (2006) 34 *Georgia Journal of International and Comparative Law* 379.

¹⁷ A. Guzman, *ibid.* at 538 (arguing that the rational choice 'offers the most fruitful strategy for studying state behavior and that it should be the dominant (though not the exclusive) approach to international law'). For a strong form of the argument that states only act in their own self-interest, see *supra*, note 11.

noted above, a public good is a good that one party cannot stop others from enjoying (that is, it is non-excludible), and one party's enjoyment does not reduce the amount for others (that is, it is non-rivalrous). Barrett notes that there are different types of public goods. He argues that addressing climate change through reducing GHG emissions is an 'additive public good' – a public good that depends on the aggregate reductions of GHG emissions by countries.¹⁸

As with other public goods, the risk with additive public goods is that some parties will 'free-ride' on the efforts of others. If countries are essentially self-interested, they will not reduce emissions, in the hope that they can continue to obtain the benefits of emissions while others bear the costs of addressing climate change. The difficulty is, of course, if all countries act this way, the public good (addressing climate change) will not be produced. Each country will attempt to allow the others to act, resulting in no action. Such behaviour is called free-riding.

This free-riding may occur if government policy-makers are focused on maximizing national welfare. They may attempt to avoid the costs of taking action on climate change and yet still gain the benefits. It may also occur under political economy or public choice scenarios in which the policy-makers are seeking to enhance their own welfare by putting in place policies that favour GHG emitters. Policies may not be adopted which, though collectively rational, are not individually rational for each country.

If the public goods problem arises within a country (such as where individuals are attempting to free-ride on the GHG reducing actions of others), there are a variety of ways in which these problems can be overcome. For example, governments can force individuals to take actions that are in their best interests but which they would not take if left to their own devices, such as through a tax on GHG emissions. Alternatively, individuals in small cohesive groups can rely on norms of behaviour and reputation to overcome these problems. As we will discuss, at the global level, producing public goods can be even more difficult as there is no international government with power to take such action.

¹⁸ See Scott Barrett, *Why Cooperate? The Incentive to Supply Global Public Goods* (Oxford: Oxford University Press, 2007) (describing reducing concentrations of GHG in the atmosphere as an additive or 'aggregate efforts' public good as opposed to a 'single best efforts' public good (such as stopping an asteroid from hitting the earth), which can rely on unilateral action, or a 'weakest link' public good (such as stopping the spread of a disease), which depends on every country being involved).

2.2 TRADE AGREEMENTS, PRISONERS' DILEMMAS, AND PROTECTIONISM

It is not sufficient to discuss only the effects of climate change and the need to address them. The ultimate goal should not be simply to address climate change but to maximize social welfare, however defined. The environment is a central part of any discussion of social welfare. However, there are other elements as well. As Sen points out, there are various aspects or 'freedoms' that make up a fulfilled life – 'a life one has reason to value'¹⁹. He points in particular to political freedoms, economic facilities, social opportunities, transparency guarantees, and protective security. These freedoms encompass 'both the processes that allow freedom of actions and decisions, and the actual opportunities that people have, given their personal and social circumstances.'²⁰ They are closely related and depend on the physical environment and individuals' relationship to it. They also encompass economic freedoms. Sen argues that markets are tied to economic growth and increase living standards and '[p]olicies that restrict market opportunities can have the effect of restricting the expansion of substantive freedoms that would have been generated through the market system, mainly through overall economic prosperity'.²¹ Economic freedoms help generate the prosperity needed for other freedoms or social facilities such as education or health services. Sen also notes that restricting people's ability to transact is itself a form of 'unfreedom'. It is not that markets are the font of all good, nor should they be without restriction. Instead, Sen is pointing to a broader view of how to foster lives that individuals have reason to want to lead.

International trade fits within these freedoms in the sense of fostering economic opportunities. Increasing trade can increase the economic growth of the parties. Trade can, in particular, be beneficial for developing countries. The WTO's current Doha Round of negotiations (the so-called 'Doha Development Round') has been estimated to have the potential to increase global economic activity by \$100 billion, with developing countries obtaining approximately 80 per cent of the gains.²² Further, develop-

¹⁹ Amartya Sen, *Development as Freedom* (New York: Anchor Books, 1999), at 74.

²⁰ *Ibid.* at 17.

²¹ *Ibid.* at 26.

²² K. Anderson and William Martin, *Agricultural Trade Reform and the Doha Development Agenda* (Washington, DC: World Bank, 2005). There is a need to attend to the distributional impacts related to the gains from trade. See Jeffrey Sachs, *The End of Poverty* (New York: Penguin, 2005) (arguing that while trade is

ing countries are provided in some instances with special preferences that allow them access to developed country markets at a lower tariff rate than for developed countries. The hope is that such preferences can bolster economic growth for developing countries.²³ Again, the argument is not that trade or economic growth are ends in themselves but that they are important for both developing and developing countries in providing the conditions for improving the lives of their people.

Like climate change, trade raises concerns about cooperation between countries. Regan writes of two principal 'stories' about why trade agreements are necessary – one about externalities and the other about protectionism.²⁴ The externality story concerns a terms of trade effect of one country's actions on another.²⁵ In this story, a country can change its terms of trade (the relative price of its goods on the world market) by imposing an import tariff – that is, making the world price of the imported goods fall relative to that of the goods that the country exports. The country, in effect, benefits from lower priced imports and higher priced exports. The result is a form of the 'prisoners' dilemma'. If all countries acted this way, they would all be better off if they could credibly commit to

important to provide growth to developing countries, there is still a need for other measures (including aid and institutional reform) to ensure that developing countries benefit from the economic activity arising from more liberalized trade. See also Paul Krugman, 'Trade and Inequality, Revisited' *Vox* (15 June 2007) (arguing for the importance of taking into account the distributional impacts of freer trade even in developed countries).

²³ There is a debate about whether these permissive policies for trade barriers aid developing countries. See, for example, T. Epps and M.J. Trebilcock, 'Special and Differential Treatment in Agricultural Trade: Breaking the Impasse' in Chantel Thomas and Joel P. Trachtman (eds), *Developing Countries in the WTO Legal System* (Oxford: Oxford University Press, 2009).

²⁴ Donald Regan, 'What Are Trade Agreements For? – Two Conflicting Stories Told by Economists, With a Lesson for Lawyers' (2006) 9 (4) *Journal of International Economic Law* 951. For other discussions of why countries enter into trade agreements, see Kyle Bagwell and Robert Staiger, *The Economics of the World Trading System* (Cambridge, MA: MIT Press, 2002) and Douglas Irwin, Petros Mavroidis and Alan Sykes, *The Genesis of the GATT* (Cambridge: Cambridge University Press, 2008).

²⁵ Bagwell and Staiger argue for viewing trade and trade agreements through a terms of trade lens. For example, see Bagwell and Staiger (2002). For the terms of trade story to apply, the country applying the tariff must be a 'large' country in relation to the good such that its tariff policy impacts the world price. However, Bagwell argues that countries may be 'large' for some goods and 'small' for others. K. Bagwell, 'Remedies in the WTO: An Economic Perspective', in Merit E. Janow, Victoria J. Donaldson and Alan Yanovich (eds), *The WTO: Governance, Dispute Settlement & Developing Countries* (Huntington, NY: Juris Publishing, 2008).

not imposing tariffs to improve their terms of trade. However, it is difficult for countries to make such a commitment where there is no international body to enforce it.

The second story relates to protectionism.²⁶ Each country would be better off by unilaterally adopting a policy of free trade. A tariff raises the price of imports and provides gains to domestic producers of goods along with revenue for the government. However, when a tariff is put in place, there is also a loss to consumers of imports, who must now pay more for the goods and in some cases are priced out of the market. The losses to consumers from a tariff exceed the gain to the producers of the good plus the government revenue.²⁷ As a result, in theory countries should unilaterally move to free trade. However, the protectionist story is based on the political economy model of why countries act. Domestic producers and their workers have the resources and the incentive to induce government policy-makers to put in place tariffs which favour the producers despite the loss to the country as a whole. While consumers lose, they are a diffuse group with greater costs of organizing and lower individual stakes in the issue than the producers. Political officials adopt tariffs as they have the most to gain (including, for example, funds for re-election, promises of votes, or future job opportunities) from complying with the wishes of producers.

In these stories, trade agreements are a means of overcoming a prisoners' dilemma, allowing countries to commit to lowering tariffs and raising trade volumes.²⁸ This objective explains why agreements tend to constrain the use of tariffs. It can also explain some of the non-tariff-related features of trade agreements. Once negotiations were successful in bringing down

²⁶ See, for example, Warren Schwartz and Alan O. Sykes, 'The Economic Structure of Renegotiation and Dispute Resolution in the World Trade Organization' (2002) 31 *Journal of Legal Studies* S179. Bagwell and Staiger argue that the terms of trade story can encompass protectionist objectives of governments as the political factors can be captured through the local price of goods: Bagwell and Staiger, *supra* note 24 and Bagwell, *ibid.*

²⁷ Paul Krugman and M. Obstfeld, *International Economics: Theory and Policy*, 7th edn (London: Pearson, 2005).

²⁸ Bagwell, *supra* note 25. Alternatively, trade agreements could be viewed as allowing countries to maximize the member governments' welfare and, in particular, the welfare of their political officials. The terms of the agreements, under this view, should be seen as political bargains to allow political officials to gain from seeking favours from concentrated interests: Sykes, *supra* note 11. A third possibility is that trade agreements could be viewed as allowing countries to credibly commit to their domestic constituencies not to engage in protectionism – that is, as a form of 'tying themselves to the mast' so they cannot be pressured into protecting domestic industries.

tariffs on goods, there was a concern that countries would shift protectionism from tariffs to other 'behind-the-border' measures such as discriminatory regulations or taxes.²⁹ Trade agreements were seen as a means of policing such 'behind-the-border' measures.

As we will see, the potential conflict between trade and climate policies arises in the form of both tariff and non-tariff barriers to trade. Countries may raise tariffs to attempt to force another country to take action on climate change, or to mitigate the impacts of domestic climate measures on the competitiveness of their own industry. They may also use measures that appear to be aimed at GHG emissions but, in fact, are in whole or in part designed to provide an advantage to domestic industry. Trade agreements and dispute resolution panels attempt to constrain these conflicts. The fear is that in doing so they will also constrain the ability of countries to address climate change.

2.3 THE DESIGN OF INTERNATIONAL AGREEMENTS

Trade agreements therefore are similar to international climate change agreements. Each attempts to provide gains to countries that would not otherwise arise, because of self-interested, non-cooperative behaviour. In the climate change context, the agreement overcomes the unwillingness of countries to contribute to an aggregate public good. In the trade context, trade agreements may overcome a prisoners' dilemma under which countries are better off acting cooperatively but cannot credibly commit to doing so. They may also provide a credible means to commit either internationally or domestically not to engage in protectionism.

The design of international agreements is therefore central to any discussion of both international trade and climate change policy. This design is influenced by two key factors. First, countries cannot be forced to sign onto any agreement or accept any particular level of commitments under an agreement. Countries must willingly agree to be bound by an agreement. Further, even if they do agree to participate in an agreement and adopt commitments, no general international body exists to enforce compliance with an agreement. Countries must willingly agree both to be bound by the agreement and to any enforcement mechanism under the agreement. Such enforcement includes not only the formal enforcement

²⁹ Michael J. Trebilcock and Robert Howse, *The Regulation of International Trade*, 3rd edn (London: Routledge, 2005).

mechanisms under the particular agreement but also the potential reputational loss from failing to comply with a treaty. Entering into the agreement signals a commitment the strength of which depends on the history of compliance by the state.³⁰

This self-enforcing nature of international agreements makes for difficult trade-offs in designing effective treaties.³¹ Countries must balance the level of commitments they accept under the agreement and the strength of the enforcement mechanisms. It may be that countries will either not participate in an agreement or not accept significant commitments if the agreement contains strong enforcement provisions.

The second factor is that international agreements often deal with complex, uncertain issues that cannot be fully specified in advance. For example, negotiations to reduce tariffs may be difficult given uncertainty about future economic conditions. It may be even more difficult to set out in advance rules concerning non-tariff barriers. There are many different products, many measures which can impact trade and uncertainty about future economic and political conditions. As a result, Horn and Mavroidis argue that trade agreements can be viewed as incomplete contracts.³² They leave a number of matters unspecified because of the cost (or impossibility) of negotiating each potential rule.

These two factors help explain why certain treaties exist and the nature of their dispute settlement systems. Designing treaties requires determining what should be in the treaty (that is, what it should cover and how detailed the requirements should be) and how conflicts under the treaty should be resolved. These issues are necessarily connected. If international agreements are incomplete, there is a need for a body to fill in the gaps. For example, if countries cannot (or decide not to) agree on detailed rules on what are permissible non-tariff barriers to trade, they may instead insert a general provision in the agreement (as they did in the GATT) that no measure can discriminate in favour of domestic products at the

³⁰ Guzman, 'Reputation and International Law', *supra* note 16.

³¹ For a discussion of this trade-off in environmental agreements, see Barrett, *supra* note 18, and Scott Barrett, *Environment and Statecraft: The Strategy of Environmental Treaty-Making* (Oxford: Oxford University Press, 2003). In the context of trade agreements, see Henrik Horn and Petros Mavroidis, 'International Trade – Dispute Settlement', in Alan O. Sykes and Alan Guzman (eds), *Research Handbook in International Economic Law* (Cheltenham, UK and Northampton, MA, USA: Edward Elgar, 2008).

³² See, for example, Horn and Mavroidis, *ibid.* at 183, and Henrik Horn, Giovanni Maggi and Robert W. Staiger, 'Trade Agreements as Endogenously Incomplete Contracts' (NBER Working Paper 12745, December 2006). See also Sykes, *supra* note 11.

expense of imports.³³ The parties may then agree to a dispute resolution body that has the power to interpret the provision and apply it to particular measures. At the same time, these tribunals may have the power to directly enforce the agreement such as by authorizing trade sanctions (as in the case of the WTO) and/or more indirectly enforce it such as by announcing non-compliance in order to trigger reputational penalties for the violators (as may be the case for violations of the Kyoto Protocol). The lack of an international equivalent of a domestic government requires the parties to agree on how much power to give these tribunals and what sanctions they may impose. There can be complex processes of deciding what commitments countries are willing to undertake, how detailed they are willing to make these commitments *ex ante*, what the remedies are for non-compliance with the agreement, and what institutions should be established to interpret and enforce the agreement.

2.4 RULES, STANDARDS AND INSTITUTIONS

This discussion of the nature of the appropriate content of international agreements and the appropriate dispute settlement system raises issues about who actually decides the questions of what actions are permissible. The institutional arrangements will determine who makes the decision about what is the most efficient or most fair solution. An international agreement with few commitments or strictures on domestic policy allows domestic governments to decide the scope of their permissible policies. Such an agreement allows greater domestic policy control but potentially at the expense of gains from cooperative action on some issues. For example, if there are few commitments as to the appropriate level of GHG reductions for countries, there is a greater range of permissible climate policies for each country but a lack of control of the free-rider problem. If, on the other hand, the agreement contains very detailed commitments, in one sense each domestic government has control over its policy (since it had to agree to be bound by the agreement) but the actual scope of policies will depend on such factors as the process of negotiation of the agreements, trade-offs across issues, who is involved in the negotiations, and the *ex ante* information required. Further, to the extent the agreement is incomplete and the actual application of particular rules is left to a tribunal, the tribunal may have power to decide which policies are appropriate.

How then to decide on the content and enforcement mechanism of an

³³ Horn, Maggi and Staiger, *ibid.*

agreement? With the variety of activities, economic conditions, industries and potential measures covered by any agreement relating to trade or to climate change, agreements concerning trade and climate are likely to be incomplete. Horn et al. argue that in the trade context the incompleteness will depend on the level of uncertainty about different circumstances and contracting costs (such as the costs of negotiating the agreement).³⁴ As contracting costs increase, the optimal contract may become more rigid (with contractual obligations more detailed and less sensitive to changing economic or political conditions) or more discretionary (providing governments with leeway to set policies). Horn et al. argue that the context matters for the choice between rigidity and discretion. For example, discretion will be better where domestic instruments (such as taxes or regulatory policies) are less useful at manipulating the terms of trade as the importing countries then are less able to use these instruments to protect their domestic industries. Similarly, if the importing country has less power in the market for the imported good, it has less incentive to use protectionist measures and therefore can be provided with greater discretion.

These factors raised by Horn et al. are in effect a subset of a larger concern about the costs and benefits of different types of agreements. In the broadest terms, institutions and agreements should be designed to maximize social welfare. Maximizing social welfare in this sense must encompass both economic efficiency and fairness including any preferences over the fair allocation of costs and benefits of society. In this way, efficiency and fairness are intimately tied and in the broadest sense efficiency encompasses a society's view of fairness.³⁵ A choice cannot be efficient unless it maximizes welfare, including distributing its subsequent burdens and benefits fairly across members of the society. This connection between efficiency and fairness raises difficult questions about how to decide what is 'fair', how you can tell whether social welfare is maximized and who are the relevant members of a society. Are they the citizens of a particular state? All people in all countries? Future generations?

Different institutions will generate different answers to these questions. This, in part, returns us to the issue of who decides. Each institutional

³⁴ Horn, Maggi and Staiger, *ibid.*

³⁵ Kaplow and Shavell argue that there can be no consideration of fairness separate from social welfare where social welfare includes preferences of individuals or society over distributional fairness (see, for example, Louis Kaplow and Steven Shavell, *Fairness versus Welfare* (Cambridge, MA: Harvard University Press, 2002)). This argument spawned a large debate over whether efficiency and fairness were necessarily separate or whether efficiency in the broadest sense encompasses fairness. For our purposes, it is not necessary to attempt to resolve this debate.

arrangement provides different concerns related to the effectiveness of the agreements and institutions from an environmental perspective, the costs of adopting a particular agreement and dispute resolution form (including negotiating costs, enforcement costs and information costs), equity and the political feasibility of particular forms of agreements or dispute settlement systems. For our purposes, we will focus on two particular categories of variables for choosing the optimal form of agreement and dispute resolution system: flexibility and cost.³⁶

2.4.1 Flexibility

Flexibility refers to how detailed the requirements are in an agreement. A central question is how much completeness is optimal and, if there are gaps in the agreement, how they are to be filled in the case of conflict. The flexibility in an agreement can in part be thought of in terms of whether the agreement should be based on rules or standards. Rules are detailed prescriptions of how particular issues are to be resolved. For example, a rule in an agreement could specify that carbon taxes at a particular level on specified goods are permissible. Standards, on the other hand, are more general statements of what is required, leaving a tribunal to decide whether a particular measure falls within the requirements of the standard. In the trade context, the national treatment principle (requiring that imports be treated no less favourably than domestically produced goods) is a standard as states must comply with this principle and a tribunal decides if a particular regulation satisfies the principle. Both rules and standards can be more or less flexible but these terms are useful as broad categories.

Flexibility, or conversely complexity, raises a variety of issues related to the efficiency and fairness of an agreement or set of institutions. These issues include:

- *Variation in costs and benefits* Increasing flexibility permits better tailoring of requirements to differences in costs and benefits. These differences could arise, for example, across different countries. Each country will have different costs for different methods of addressing climate change. Moreover, different countries will have greater or lesser costs of climate change over time. A flexible requirement would take these differences into account to allow countries to respond to

³⁶ For a seminal discussion of the trade-offs inherent in choosing the optimal form of legal requirements, see Louis Kaplow, 'Rules Versus Standards: An Economic Analysis' (1992) 42 (3) *Duke Law Journal* 557.

climate change optimally for their particular circumstances. This flexibility could come from very detailed rules about what measures are permissible in particular circumstances. Alternatively, flexibility could arise where a tribunal takes into account differences in costs and benefits across countries. Finally, flexibility could arise by allowing countries to make determinations about the appropriate measure in their circumstances, absent tribunal oversight.

- *Variation in development* The flexibility must encompass the differences between developed countries as well as between developed and developing countries and between different developing countries. For example, Sari divides developing countries into five categories: (i) the large rapidly industrializing countries, being predominantly Brazil, India and China (and to some extent Indonesia); (ii) the oil producing countries, a number of which are OPEC countries; (iii) forested countries, primarily Latin American countries (other than Brazil and Peru), which have promoted forests as sinks to reduce carbon dioxide levels in the atmosphere; (iv) small island countries that are generally vulnerable to climate change; and (v) the Least Developed Countries, which are 49 countries identified by the United Nations as the 'least developed'.³⁷

- *Variation in values* As noted above, responding to climate change is at its core an ethical issue – how much do we owe to people in other countries and to future generations? People's values will vary both across and within countries.³⁸ Differences in values could lead to variations in the speed at which different countries feel they should address climate change and different decisions about the appropriateness of a particular measure. For example, a stringent tax on emissions may be viewed differently in a country that has a very high preference for intergenerational equity as opposed to a state that does not value the welfare of future generations as highly. There may be some merit in flexibility where the rule or standard

³⁷ Agus Sari, 'Developing Country Participation: The Kyoto–Marrakech Politics' (Hamburg Institute of International Economics, Discussion Paper 333, 2005).

³⁸ This difference may arise under various visions of how a country decides on its policy, whether it is a mere aggregation of the preferences of those related to a particular state (or a subset of those people) or results from a more deliberative process in which the decisions of the state determine its policy. See Sen, *supra* note 9.

allows countries to respond to the preferences of their own citizens, as opposed to requiring all measures to conform to a particular vision of the appropriate equitable distribution. Again flexibility could come from a detailed agreement, through a tribunal determining whether a measure falls within a standard, or by leaving the choice of measures to particular states.

- *Information and uncertainty* There is little debate now that climate change is actually occurring. However, there is debate about such issues as when the impacts will appear, what is the optimal path to emissions reductions, and what types of instruments will bring about emission reductions.³⁹ Moreover, some of the information about these issues will be revealed over time – we will know more in the future about how severe the change will be than we know now. There is value to retaining some flexibility to adjust to new information over time.

- *Innovation* Two types of innovation will be important to addressing climate change. First, a key factor in addressing climate change will be finding new ways to do things that we do now without emitting as much GHG – new means of creating electricity, new production processes, new forms of transportation. Whatever agreement relates to trade and climate change, it should be designed in a manner that fosters rather than hinders innovation across goods and services. In part, this simply means not allowing barriers to trade in new forms of goods, to the extent they are more environmentally friendly than existing goods. Diffusion of new climate friendly goods will be critical to global reductions in GHGs. Second, countries may innovate in how they address climate change. As noted above, there is uncertainty about what instruments will work best to reduce GHGs to stave off catastrophic global warming. Any institutions or agreements aimed at addressing the interaction of climate change and trade need to provide space for such innovation.

2.4.2 Cost

There are large benefits to flexibility. It allows tailoring to the circumstances of particular countries, to new information as it arises, and to new ways of taking action. Such flexibility increases not only the efficiency of

³⁹ See, for example, Lomborg, *supra* note 2.

To a certain extent, the legitimacy of the decision-maker will depend on whose values are incorporated into the decision. For example, one argument against WTO decision-making in social policy areas (such as health and environmental policy) is that the individuals who sit on WTO panels and the Appellate Body tend to be steeped in trade values. They are often individuals who have worked for some time in the trade area and, it is argued, tend to prioritize trade over other values. Domestic government officials, on the other hand, are argued to take account of the broader social concerns of their citizens. These arguments must of course be tempered by political economy concerns about the decision-making of domestic officials. They may not be attempting even to maximize national social welfare in the sense of taking into account the preferences of all the citizens. They may instead be attempting to garner returns from particular interest groups. Thus the question: who has greater legitimacy to make decisions?

These choices about who decides certain issues will pervade all our discussions of the interactions of trade and climate change policies. They form the basis for other factors such as the independence of decision-makers, the process of decision-making and who gets to be heard in the process. In terms of WTO review of domestic policies, the stringency of WTO review will determine whether the domestic government's information and values about climate change will prevail or those of trade panels or the Appellate Body. We will discuss various ways in which these concerns may be addressed including through adjusting the standard of review by the WTO, incorporation of information from international environmental treaties or acceptance of amicus briefs. These issues also underlie the discussion of unilateral and multilateral solutions to the free-rider problem at the core of the climate change issue. For unilateral solutions, the concern lies in part in the ability of some countries to force others to take action – the ability to impose their values (in particular, developed country values) on others (particularly developing countries). The same concerns may arise under multilateral solutions – different negotiating structures will favour the interests of different groups or countries.

Before we discuss the way forward with respect to agreements and institutions, we must first set out where we are now – in terms of both climate change and trade agreements. It is to this task we turn in Chapter 3.

3. The existing trade and climate change frameworks

This chapter provides an overview of the range of agreements and the basic institutional arrangements and structure of both the WTO and the international climate change regime. The climate change regime in particular is in a state of flux following the 15th Conference of the Parties in Copenhagen in December 2009. Rather than attempting a comprehensive and up-to-date description of the regime, we focus here on the core principles that date from the initiation of the UNFCCC and what we consider to be some of its enduring characteristics. The overview forms the foundation for the ensuing chapters that examine the linkages between trade and climate change. We focus on those institutional features of each regime that lay the groundwork for their interactions.

3.1 THE WTO

3.1.1 Overview of the WTO

The WTO, like its predecessor the General Agreement on Tariffs and Trade (GATT), was established to provide a common institutional framework within which its members can conduct trade relations. The organization provides a forum for negotiations between its members, for dispute settlement, and facilitates implementation, administration and operation of the various covered agreements as annexed to the Marrakesh Agreement Establishing the WTO.¹ While the predominant thrust of the WTO is to support trade liberalization,² the Preamble to the Agreement

¹ There are approximately 60 agreements, decisions, annexes, and understandings. These cover trade in goods, services, and intellectual property. The full text of the agreements can be found in World Trade Organization, *The Legal Texts: The Results of the Uruguay Round of Multilateral Negotiations* (Cambridge University Press/World Trade Organization, 1999).

² The Preamble to the Agreement Establishing the WTO notes the objectives of raising standards of living, ensuring full employment and growing real income

Establishing the WTO also refers explicitly to the environment, recording that Members wish to allow for 'the optimal use of the world's resources in accordance with the objective of sustainable development, seeking to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of development'. Despite the grand rhetoric, there is little consensus on what the Preamble's practical implementation ought to involve, not least with regard to climate change. As the WTO's Director-General, Pascal Lamy, has stated, 'WTO Members have very different perceptions of what the trading system ought to do on climate change'.³ The question has not been addressed systematically within the WTO system, falling instead to climate change negotiators who have identified a number of issues but – as we discuss – failed to date to reach any comprehensive agreement.

3.1.2 The Key Agreements

A number of the covered agreements bear direct relevance to climate change and form the heart of the linkages between the trade and climate change regimes identified in this book. Their relevance stems from obligations that countries must abide by when enacting domestic climate change measures, and that will have a bearing on the ability to invoke trade measures as sanctions to force participation and/or compliance with reduction commitments, whether unilaterally or as part of a multilateral climate change agreement. The most important agreements are the General Agreement on Tariffs and Trade (GATT), the Agreement on Technical Barriers to Trade (TBT Agreement), and the Agreement on Subsidies and Countervailing Measures (SCM Agreement). The most pertinent provisions of these agreements are outlined briefly below.

GATT

The GATT, signed in 1947, establishes the basic legal framework for international trade in goods and commits countries to agreed-upon tariff levels. Key provisions include: a prohibition on quantitative restrictions such as

and effective demand, and expanding the production of and trade in goods and services and to this end states the desire of Members to enter into 'reciprocal and mutually advantageous arrangements directed to the substantial reduction of tariffs and other barriers to trade and to the elimination of discriminatory treatment in international trade relations'.

³ Pascal Lamy, Speech to the European Parliament, 29 May 2008, available at: www.wto.org/english/news_e/sppl91_e.htm (date accessed: 15 August 2008).

quotas or bans (Article XI); tariff concession commitments (Article II); rules against discrimination both in favour of some Members and against others (the most-favoured-nation or MFN obligation in Article I) and in favour of domestic industry (the national treatment obligation in Article III); and disciplines on government subsidies (Article XVI). Exceptions in Article XX allow countries to justify measures that would otherwise violate one of its provisions. The two most relevant to climate change policy are those that exempt measures 'necessary to protect human, animal or plant life or health' (Article XX(b)) and those 'relating to the conservation of exhaustible natural resources' (Article XX(g)). Measures that fit one of these exceptions must be applied in a manner that ensures they do not constitute arbitrary or unjustifiable discrimination, or a disguised trade restriction.

TBT Agreement

The TBT Agreement addresses the possibility that technical regulations and standards, marking and labelling requirements, and procedures for assessment of conformity with regulations and standards might be designed and applied in such a manner that they create obstacles to international trade. The Agreement covers both mandatory 'technical regulations' and voluntary 'standards'. It seeks to prevent discrimination by placing procedural constraints on steps that countries must take in creating technical regulations or voluntary standards. It also includes (in Article 2.1) a national treatment provision that prohibits discrimination in favour of domestic products. In addition, Article 2.2 requires Members to ensure that their mandatory technical regulations (as well as the voluntary standards under their control) 'are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade'.

There are no provisions in the TBT Agreement that clarify its relationship with the GATT, although generally its provisions can be seen to add to those of GATT Article III. Any climate change agreement will have to comply with the provisions of both agreements. Marceau and Trachtman suggest that while it is possible that a measure might be in violation of the TBT Agreement while compatible with the GATT, it is less probable that a technical regulation complying with the TBT Agreement would violate the GATT.⁴

⁴ For a full discussion of the relationship between the TBT Agreement and the GATT, see Gabrielle Marceau and Joel Trachtman, 'The Technical Barriers to Trade Agreement, the Sanitary and Phytosanitary Measures Agreement, and the General Agreement on Tariffs and Trade' (2002) 36 (5) *Journal of World Trade* 811 at 873.

SCM Agreement

Subsidies have long been disciplined by GATT Article XVI, which provides for notification and, if serious prejudice was caused or threatened, consultations regarding the possibility of limiting the subsidization. This provision was much strengthened by the introduction of the SCM Agreement in the Uruguay Round. It supplements GATT Article XVI by regulating the use of subsidies in order to reduce their adverse effects. Subsidies are defined in Article 1.1 as 'financial contributions by a government or any public body' such that 'a benefit is thereby conferred' on the recipient. The Agreement distinguishes between prohibited and actionable subsidies. The former are prohibited outright, while the latter may violate the Agreement depending upon their effect. *Prohibited* subsidies are those that are contingent on either (a) export performance or (b) the use of domestic goods over imported goods. *Actionable* subsidies are those that (a) cause injury to the domestic industry of another Member; (b) nullify or impair the benefits that Members accrue directly or indirectly under the GATT; or (c) cause serious prejudice to another Member's interests.

If an industry in one country is negatively affected by either a prohibited or actionable subsidy provided by another Member to its domestic industry, the affected Member may use the WTO's dispute settlement procedure to seek withdrawal of the subsidy or removal of its adverse effects. Alternatively, it can launch its own investigation and impose countervailing duties on subsidized imports found to be hurting domestic producers.

3.1.3 Dispute Settlement, Compliance, and Enforcement

The feature of the international trading regime that sets it apart from other international legal regimes is its dispute settlement mechanism, governed by the Dispute Settlement Understanding (DSU). This mechanism has been described by some commentators as the most important and most powerful of any international law tribunal.⁵ Where one Member has a complaint against another, the DSU stipulates that they must first seek to resolve the matter through consultations. If consultations fail, the complaining Member may request the establishment of a Panel to hear the complaint. Panels are composed of three individuals who must make an 'objective assessment' of the facts and provide a report to the Members.⁶

⁵ John H. Jackson, *Sovereignty, the WTO, and Changing Fundamentals of International Law* (Cambridge: Cambridge University Press, 2006) 135. Jackson notes that some commentators, however, maintain that the International Court of Justice ought to take this title.

⁶ Article 11 of the Dispute Settlement Understanding requires a panel to

The unsuccessful Member may appeal the Panel's decision to the Appellate Body (which is a standing body of trade law experts). The decisions under the DSU have been well supported by Members. In the WTO's first decade, it adopted 97 panel reports and 61 Appellate Body reports.⁷

The losing Member will usually be asked to bring their policies into compliance with WTO rules, and where they fail to do so within a reasonable period of time, the complaining Member may negotiate compensation or, subject to consent of the Dispute Settlement Body (DSB),⁸ suspend concessions to the losing party. While such consent is not difficult to obtain, there are questions surrounding the effectiveness of suspending concessions. In particular, smaller economies are likely to have difficulty using suspension of concessions to force compliance by a larger trading partner and so such suspension may not be important enough from the larger country's perspective to encourage compliance.⁹

3.1.4 Developing Countries in the WTO

Treatment of developing countries in the international trading regime has evolved considerably since the GATT was established in 1947. While the GATT's original 23 signatories included 11 developing countries, the Agreement did not initially recognize them as a group and made no special provision for their benefit. By the 1950s, however, they had made a case for special and differential treatment (SDT) based largely on notions of fairness and the belief that trade policies that maximize welfare in the rich industrialized countries may not be the same as those which do the most to promote development in the poorest countries.¹⁰ They argued that it was not realistic to expect them to compete on a level playing field with industrialized countries and that free trade would only entrench a legacy of colonialism and dependence on primary commodities.¹¹

make an 'objective assessment of the matter before it'.

⁷ Jackson, *supra* note 5 at 135.

⁸ The DSB is the WTO General Council – being a body composed of all WTO members – when it convenes to settle disputes arising between members.

⁹ See William J. Davey, 'The Sutherland Report on Dispute Settlement: A Comment' (2005) 8 (2) *Journal of International Economic Law* 321.

¹⁰ Joseph E. Stiglitz and Andrew Charlton, *Fair Trade For All: How Trade Can Promote Development* (New York: Oxford University Press, 2005) at 88.

¹¹ Elizabeth Acorn, *Learning from Experience: Special and Differential Treatment in the World Trade Organization* (2006) [unpublished, Toronto]. For a succinct description of the history of SDT, see Hunter Nottage, 'Trade and Competition in the WTO: Pondering the Applicability of Special and Differential Treatment' (2003) 6 (1) *Journal of International Economic Law* 23 at 24.

This push by developing countries led to the redrafting of Article XVIII (Government Assistance to Economic Development) at the 1954–55 GATT Review Session. The redrafted Article gave developing countries policy space and flexibility to protect their import-competing infant industries, including by derogating from scheduled tariff commitments (Article XVIII, Section A) and by the use of export subsidies for manufactured goods (Article XVI.4). A decade later, at the conclusion of the Kennedy Round, Members adopted Part IV of the GATT. Part IV specifically addressed ‘Trade and Development’ and encouraged developed countries to recognize the importance of market access for developing countries. Most importantly, however, Part IV formalized the principle of ‘non-reciprocity’, exempting developing countries from having to make reciprocal tariff concessions, stating that ‘the developed contracting parties do not expect reciprocity for commitments made by them in trade negotiations to reduce or remove tariffs and other barriers to trade of less-developed contracting parties’.¹² This move to improve market access for developing countries was built upon with the adoption in 1979 of the ‘Enabling Clause’ which created a permanent legal basis for preferential tariff treatment to exports from developing countries (pursuant to the Generalized System of Preferences or GSP)¹³ as well as greater flexibility in the formation of preferential trade regimes between developing countries.

The Uruguay Round, which concluded in 1994, saw a shift in focus away from the notion of treating developing countries as exceptional, to an attempt to further their integration into the world trading system by asking them to take on the same substantive rights and obligations as developed countries.¹⁴ SDT provisions were intended to assist in the integration process. Thus, the Uruguay Round Agreements introduced provisions giving developing countries extended time periods to comply with various obligations, and also sought to increase trade opportunities for developing countries through increased market access. In addition, they added a new layer of SDT provisions aiming to assist developing countries adjust to the liberalization required of them by having developed countries provide them with technical assistance.

The evidence available shows that, despite these commitments, developing countries continue to face serious trade-related impediments across various sectors. Scholars generally and governments of developing

¹² Article XXXVI.8.

¹³ The GSP was implemented under the auspices of UNCTAD in 1971: Resolution 21(II) of the Second UNCTAD Conference, in UNCTAD, Proceedings of the Conference of 1968, Report and Annexes (United Nations, TD/97).

¹⁴ Acorn, *supra* note 11 at 16.

countries have criticized the Uruguay Round’s SDT initiatives.¹⁵ For example, Ostry writes that the Uruguay Round Agreements provide arbitrary implementation periods, inadequate technical assistance and ‘seemingly little more than tokenesque compensation’.¹⁶

All other factors aside, this history surely justifies reluctance on the part of developing countries to accept promises of trade-related ‘carrots’ to induce them to participate in any given climate change mitigation endeavour. Equally, it will deepen antagonism likely to be caused by any use of trade sanctions or other measures designed to compel developed countries to take climate change mitigation measures. Developed countries therefore face major challenges in overcoming this well-justified cynicism on the part of developing countries.

3.1.5 Trade and Environment in the WTO

The WTO maintains a Committee on Trade and Environment (CTE) which was established pursuant to the Ministerial Decision on Trade and the Environment, adopted in Marrakesh in 1994. While the CTE has a broad-ranging work program, it does not include any specific reference to climate change. However, several of its mandated tasks are highly relevant to the issues raised by climate change, including examination of the relationship between:

- the provisions of the multilateral trading system and trade measures for environmental purposes, including those pursuant to multilateral environmental agreements (MEAs);
- environmental policies relevant to trade and environmental measures with significant trade effects and the provisions of the multilateral trading system;
- the provisions of the multilateral trading system and charges and taxes for environmental purposes; and
- the provisions of the multilateral trading system and requirements

¹⁵ See for example, Joel Trachtman, ‘Legal Aspects of a Poverty Agenda at the WTO: Trade Law and “Global Apartheid”’ (2003) 6 (1) *Journal of International Economic Law* 3.

¹⁶ Sylvia Ostry, ‘The Uruguay Round North–South Grand Bargain: Implications for Future Negotiations’ (2000) *Political Economy of International Trade Law*. See also Joseph E. Stiglitz and Andrew Charlton, *Fair Trade for All* (New York: Oxford University Press, 2005); and Joseph E. Stiglitz, *Globalization and its Discontents* (New York: W.W. Norton & Company, 2003).

for environmental purposes relating to products, including standards and technical regulations, packaging, labelling, and recycling.

To date, there has been little progress on achieving any kind of agreement on these issues and much remains uncertain and susceptible to interpretation by a panel or the Appellate Body should a dispute arise. Throughout this book, we analyse how the dispute settlement system has dealt with, or would be likely to deal with, the issues raised in the context of these relationships. The analysis reveals a significant degree of uncertainty across each set of linkages. As we discuss, this uncertainty has both positive and negative implications: it provides flexibility in an area where it is critical that countries are able to react to changing information over time and to experiment with different domestic approaches to achieving emission reductions. However, it may also mean there is a certain regulatory 'chill' effect if governments fear possible WTO challenges or trade sanctions, and it may add to the administrative costs of trying to determine the likely WTO-consistency or otherwise of a given measure.

3.1.6 On-going Trade Negotiations

In 2001, a new round of trade negotiations was launched at the Ministerial Conference in Doha. The Ministerial Declaration adopted at Doha on 14 November 2001 set out the negotiating agenda for matters related to trade and the environment in paragraph 31. It provided that the Agenda is to cover, *inter alia*, the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements (MEAs) and the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services. Again, these negotiations were pending at the time of writing. There has been no indication that, even if the negotiations are concluded, there will be any substantial progress on clarifying the relationship between WTO rules and multilateral environmental agreements. The specific issue of environmental goods and services is canvassed in Chapter 15.

3.2 THE INTERNATIONAL CLIMATE CHANGE REGIME

3.2.1 History of Climate Change Negotiations

In 1979, the World Meteorological Organization (WMO) organized the first World Climate Conference. It was here that climate change was

first internationally acknowledged as an 'urgent world problem'. The Conference called for global cooperation to examine the possible future course of the climate and to take the findings into account in planning for the future development of human society.¹⁷ Together with the United Nations Environmental Programme (UNEP) and the International Council of Scientific Unions, the WMO subsequently established the World Climate Program.¹⁸ A programme of scientific research and several intergovernmental conferences over the ensuing decade culminated in UN General Assembly Resolution 43/53 in 1988, which declared that 'climate change is a common concern of mankind'.¹⁹ The Resolution endorsed the establishment of the Intergovernmental Panel on Climate Change (IPCC), which was established by the WMO and UNEP the same year.

The IPCC is a scientific body charged with providing an objective source of information about climate change. Its role is to 'assess on a comprehensive, objective, open and transparent basis the latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change, its observed and projected impacts and options for adaptation and mitigation'.²⁰ In 1990, the IPCC produced its First Assessment Report in response to the General Assembly's request for a comprehensive review of and recommendations with respect to various aspects of climate change. The Report warned that, although there were many uncertainties, human activity was leading to increased atmospheric concentrations of carbon dioxide and rising temperatures.²¹ This Report was invoked by the Ministerial Declaration produced at the Second World Climate Conference in 1990, which recommended that negotiations on a framework climate convention begin without delay.²² The United Nations responded to this Declaration by launching negotiations on a framework convention on climate change. These negotiations were conducted under the auspices

¹⁷ See UNFCCC Secretariat, *United Nations Framework Convention on Climate Change Handbook* (2006), <http://unfccc.int/resource/docs/publications/handbook.pdf> at 17.

¹⁸ *Ibid.*

¹⁹ United Nations, General Assembly Resolution A/RES/43/53, 6 December 1988.

²⁰ Intergovernmental Panel on Climate Change, www.ipcc.ch/about/index.htm (date accessed: 15 August 2008).

²¹ J.T. Houghton, G.J. Jenkins and J.J. Ephraums (eds), *Scientific Assessment of Climate Change – Report of Working Group I* (Cambridge: Cambridge University Press, 1990).

²² Ministerial Declaration contained in the report of the Conference in A/45/696/Add.1, Annex III (1990).

of an Intergovernmental Negotiating Committee formed under the UN General Assembly.²³

3.2.2 The Current Agreements

The United Nations Framework Convention on Climate Change (UNFCCC) was opened for signature in June 1992 at the UN Conference on Environment and Development in Rio de Janeiro and entered into force just under two years later in March 1994. Its key goal is the stabilization of GHG concentrations in the atmosphere 'at a level that would prevent dangerous anthropogenic [human induced] interference with the climate system'.²⁴ The UNFCCC is a framework agreement and is designed to be amended and augmented over time. This occurs primarily through meetings of the Conference of the Parties (COP). The most significant addition to date is the Kyoto Protocol adopted by the COP-3 meeting in 1997.

The Kyoto Protocol sets binding targets for 37 industrialized countries and the EC for reducing GHG emissions. Several years and six meetings of the COP followed before the Kyoto Protocol finally reached the required number of signatures to achieve ratification in February 2005. As of 12 December 2007, a total of 176 countries and one regional integration organization (the European Economic Community) had ratified the Protocol. The US has not ratified the Kyoto Protocol, while Australia only did so following its 2007 federal elections. In the COP meetings following the conclusion of the Kyoto Protocol in 1997, the US made the 'meaningful participation' of developing countries a prerequisite for its ratification.²⁵ Following COP-6 in November 2000, the Bush administration officially stated that it would not be ratifying the Protocol.²⁶

²³ United Nations General Assembly, A/RES/45/212, 21 December 1990.

²⁴ UNFCCC, Article 2.

²⁵ Senate resolution 98 (proposed by Byrd-Hagel), adopted July 1997. Other contributing factors to the US refusal to ratify included that they would have to spend more than most other nations to comply with the commitments, despite having relatively little to gain. See Cass R. Sunstein, *The Complex Climate Change Incentives of China and the United States* (John M. Olin Law & Economics Working Paper No. 352 (2nd series), Public Law and Legal Theory Working Paper No. 176, The Law School, University of Chicago, 2007) 8. See also William Nordhaus, 'The Challenge of Global Warming: Economic Models and Environmental Policy' (2007), available online at: http://nordhaus.econ.yale.edu/dice_mss_072407_all.pdf (date accessed: 22 December 2009).

²⁶ Farhana Yamin and Joanna Depledge, *The International Climate Change Regime – A Guide to Rules, Institutions and Procedures* (Cambridge: Cambridge University Press, 2004) 27.

The Kyoto Protocol is based on the guiding principles contained in Article 3 of the UNFCCC, which include that the Parties should protect the climate system 'on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.' This principle was strongly influenced by the fact that the largest share of historical and current global emissions of GHGs has originated in developed countries and that per capita emissions in developing countries are still relatively low.²⁷ Pursuant to the common but differentiated responsibilities principle, the UNFCCC divides countries into three groups: Annex I (industrialized countries that were members of the OECD in 1992, plus countries with economies in transition (EIT)); Annex II (the OECD members of Annex I but not EIT members); and non-Annex I (mostly developing countries).

This distinction is maintained in the Kyoto Protocol, where only Annex I countries have legally binding limits on their GHG emissions. Together, Annex I countries are required to reduce their combined emissions to 5 per cent below 1990 levels in the first commitment period of 2008–12. In order to achieve the 5 per cent reduction target, countries have their own specific targets (negotiators could not agree on a common emissions reduction goal), which range from 8 per cent reductions for the European Union (EU) to a 10 per cent allowable increase for Iceland. Annex II countries are required to provide financial resources to enable developing countries to undertake emission reductions and to help them adapt to the adverse effects of climate change. They also have to 'take all practicable steps' to promote the development and transfer of environmentally friendly technologies to EIT Parties and developing countries. Non-Annex I countries do not have to commit to specific targets, but must report their emission levels and develop national climate change mitigation programmes.

The Kyoto Protocol allows Annex I governments to determine what domestic policies and measures to take in order to achieve their targets, although possibilities are listed in Article 2. It also defines three flexibility

²⁷ Developed countries now contribute about half of annual GHG emissions, but have nearly 85% of the world's population. The energy-related carbon footprint of an average citizen of a low- or middle-income country is 1.3 or 4.5 metric tons of carbon dioxide equivalent respectively. This compares with 15.3 in developed countries. Further, the majority of past emissions (and thus the greatest percentage of the existing atmospheric stock of GHGs) is the responsibility of developed countries. World Bank, *World Development Report 2010: Development and Climate Change* (Washington, DC: The World Bank, 2010) at 44.

mechanisms (Emissions Trading,²⁸ the Clean Development Mechanism,²⁹ and Joint Implementation³⁰) whereby Annex I countries can earn and trade emission credits through projects implemented in either other developed or developing countries, which they can use towards meeting their commitments.

While Annex I countries have significant flexibility in how they choose to meet their commitments, they are also subject to certain constraints. In particular, Article 2(3) requires that they strive to implement policies and measures in such a way as to minimize 'adverse effects', including effects on international trade and economic impacts on other countries, particularly developing country Members. In addition, Article 3(14) requires Annex I countries to strive to implement their emission reduction commitments in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, and the Conference of the Parties is charged with considering what actions are necessary to ensure this is the case.

3.2.3 Dispute Settlement, Compliance, and Enforcement

It has been stated that the procedures and mechanisms relating to compliance under the Kyoto Protocol are the strongest and institutionally most sophisticated non-compliance procedures adopted by any MEA to date.³¹ However, in comparison with the WTO's dispute settlement mechanism, the mechanism remains fairly weak. It was negotiated and designed following adoption of the Kyoto Protocol.³² The institutional centrepiece of the mechanism is the Compliance Committee, which was the last of the bodies established under the Protocol, by COP-7 in Marrakesh.³³

The key enforcement mechanism, which is to be overseen by the Compliance Committee's Enforcement Branch, is known as the 1.3 penalty rule. If a party fails to meet its initial commitments under Article 3.1 of the Kyoto Protocol, its emissions cap in the subsequent commitment period will be reduced by 1.3 times the emissions it committed to but

²⁸ Article 17.

²⁹ Article 12.

³⁰ Article 6.

³¹ Yamin and Depledge, *supra* note 26 at 386.

³² Pursuant to Article 18, which called upon the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP) to approve, at its first session, 'procedures and mechanisms' to determine and address cases of non-compliance with the Protocol.

³³ In decision 24/CP.7 as confirmed by the CMP in decision 27/CMP.1.

failed to reduce.³⁴ Further, the non-complying party's flexibility mechanisms in order to meet its targets.³⁵ While this may appear to be a scheme that is not in compliance may not enter into re-negotiation, it does so, it may not be willing to take on such significant. Enforcement or motivation for compliance may therefore be reduced from the damage to reputation from not complying with commitments. This will probably not be sufficient to ensure compliance given the high costs of addressing climate change and also the fact that in all likelihood other countries will also have failed to meet their commitments.

3.2.4 Developing Countries and the UNFCCC

As noted, application of the 'common but differentiated responsibilities' principle led to developing countries having no binding emission reduction commitments under the Kyoto Protocol. Three factors were key in the adoption of this approach: (i) their low per capita emissions; (ii) their need for development; and (iii) the fact that the currently high global concentration of GHGs is overwhelmingly due to past emissions from industrialized countries.³⁷ The approach has been criticized by those who argue that the climate change regime will never be effective until it includes the major developing countries, such as China and India.³⁸ This was a key theme

³⁴ Yamin and Depledge, *supra* note 26 at 394. See also Robert N. Stavins and Scott Barrett (2002), 'Increasing Participation and Compliance in International Climate Change Agreements' (Fondazione Eni Enrico Mattei Working Paper No. 94.2002; Kennedy School of Government Working Paper No. RWP02-031). They describe the penalty (at 20) as follows: 'If an Annex I party were to emit, for example, 100 tons more than allowed in the first compliance period (2008–2012), then the party's emission cap for the next compliance period (possibly 2013–2017) would be reduced by 130 tons – 100 tons to offset the excess plus an additional 30 tons as a penalty for non-compliance.'

³⁵ *Ibid.*

³⁶ Scott Barrett, *Environment and Statecraft: The Strategy of Environmental Treaty-Making* (New York: Oxford University Press, 2003) at 386. See also Stavins and Barrett, *ibid.* (arguing that the enforcement mechanism in the Kyoto Protocol can be expected to fail because it does not require sacrifice and punishment is forever delayed (the magnitude of punishment depends not just on an agreed penalty rate but on future emission limits and a country must agree to its future emission limits otherwise it would not choose to participate)).

³⁷ Agus Sari, 'Developing Country Participation: The Kyoto-Marrakesh Politics' (Hamburg Institute of International Economics, Discussion Paper 333, 2005) 18.

³⁸ See, for example, Stavins and Barrett, *supra* note 34 at 12. See also generally

at the COP-15 in Copenhagen in December 2009. It was widely accepted going into the meeting that agreement would be not only politically impossible but also environmentally useless if the principle simply meant that developing countries had no responsibilities at all. The question thus became one of what those responsibilities ought to be. The Copenhagen Accord failed to clearly address this issue – it provides for non-Annex I countries to take mitigation action on a voluntary basis. Least developed countries (LDCs) and small island developing nations may ‘undertake actions voluntarily and on the basis of support’.

3.3 CONCLUDING REMARKS

The international trade and climate change frameworks were developed and have evolved with only token reference to each other. This interaction will not be sufficient in the future. The climate change regime directly implicates domestic and international consumption and production patterns and, hence, international trade rules.³⁹ It is critical therefore that trade rules support, rather than hinder, action on climate change. Similarly, climate change must not be allowed to provide a smokescreen for protectionist action that would threaten international trade liberalization and further threaten the economic progress of developing countries. The remainder of this book examines the linkages between the two regimes to assess where synergies lie and where risks arise that might threaten to derail the goals of trade liberalization and the climate change regime.

4. The role of trade measures in addressing climate change

4.1 INTRODUCTION

The fundamental premise of this book is that the international trading regime and efforts to address climate change are not only inextricably linked but that synergies can be found between them that will enable achievement of environmental, trade and development goals. Understanding these linkages and possible synergies is critical for governments, policy-makers, academics, and others engaged with either endeavour. International trade is important to economic growth and prosperity in both developed and developing countries, whilst projections are that climate change will have significant impact on societies throughout the world (although current projections show that some countries will lose more than others and that there may, at least in the short term, even be some ‘winners’ from climate change). Linkages between the international trading regime and efforts to address climate change require governments and policy-makers in each area to take account of the other. Trade rules may both constrain and facilitate action to address climate change, while actions taken to address climate change will in some cases have important implications for trading relationships.

In this chapter, we introduce the three different types of linkages between trade and climate change to be examined. A key theme of the book is that international trade rules need not conflict with action on climate change. On the contrary, trade institutions and the rules they monitor can aid efforts to address climate change, both in terms of domestic actions to reduce emissions and in terms of encouraging participation and compliance with multilateral climate change agreements. Accordingly, while highlighting and examining areas of incompatibility between the two regimes, we seek to focus on ways in which they may complement each other, recognizing the benefits to be gained by countries exploiting comparative advantage through international trade, but equally the importance and urgency of taking action to mitigate (and adapt to) climate change.

Albert Mumma and David Hodas, ‘Designing a Global Post-Kyoto Climate Change Protocol that Advances Human Development’ (Widener Law School Legal Studies Research Paper Series No. 08-67, 2008)

³⁹ International Centre for Trade and Sustainable Development, Bridges Copenhagen Update, 21 December 2009, Issue 3.

4.2 IMPLICATIONS OF TRADE RULES FOR DOMESTIC CLIMATE CHANGE POLICY

4.2.1 Choosing Domestic Climate Policies

Governments could attempt to address climate change using a variety of tools. While economists tend to speak of the efficiency of taxes in causing parties to internalize externalities in some cases, it is important to take into account other factors such as whether it is possible to get the measure adopted. We will use four key criteria to discuss domestic policy instruments for addressing climate change: environmental effectiveness, efficiency, equity and political feasibility.¹

Environmental effectiveness

The choice of policy instrument will obviously depend on the policy goal and how likely the instrument is to meet that goal. The goal could be a reduction in GHG emissions by a certain percentage or an increase in the generation of electricity by renewable energy or an increase in the use of public transit. Whatever the stated goal, one of the primary concerns will be how to measure whether the instrument is actually having an impact on the particular activity or whether any change is due to other factors. Is, for example, an increase in the generation of electricity from renewable sources due to a government subsidy or would it have occurred in any event?

In addition to the difficulty in determining whether the instrument is actually bringing about the desired end, there is a concern about environmental side-effects of the instrument.² A particular instrument may be very effective at achieving its primary goal but cause other, unintended

¹ See R. Revesz and R. Stavins, 'Environmental Law', in A.M. Polinsky and S. Shavell (eds), *The Handbook of Law and Economics* vol. 1 (Amsterdam: Elsevier, 2007) arguing that instruments should be assessed based on cost-effectiveness, distributional equity and political feasibility. Cost-effectiveness includes whether the instrument achieves its goal, whether it does so at the lowest possible cost, whether it provides the relevant information to government and whether it provides adequate dynamic incentives (such as for research and development of new technology).

² See D. Duff and A. Green, 'Market-Based Policies For Renewable Energy Source Electricity: A Comparative Evaluation', in N. Chalifour, J. Milne, H. Ashabor, K. Deketelaere and L. Kreiser (eds), *Critical Issues in Environmental Taxation: International and Comparative Perspectives*, vol. V (Oxford: Oxford University Press, 2008) for a discussion of environmental side-effects and other aspects of instrument choice in the context of renewable sources of electricity.

environmental consequences. The most obvious example would be reducing GHG emissions through nuclear power, which causes its own environmental concerns. Other environmental effects may be less direct, such as where the use of the particular instrument changes the norms or values around the activity. For example, the imposition of a tax on some activity (such as gasoline) may influence individuals to see the goal (for example, driving less or driving smaller cars) as a function of the price to be paid for polluting the environment rather than a responsibility.³ Such a shift in values or norms may offset some of the gains from the use of a tax. These other environmental effects may be worth bearing in some cases but it is important to consider all such impacts in the analysis.

Efficiency

Efficiency can be used in a broad or narrow sense. The broad sense of efficiency examines the impact of the policy on social welfare. Efficiency in this sense relates to how the measure affects all individuals in society and whether it leads to an overall improvement in their welfare.⁴ Social welfare could be examined on a national basis, determining whether the policy improves welfare for the citizens of a particular country even if there are some costs that are imposed on individuals in other countries. It could also be examined on a global basis which would take into account not only the costs and benefits in the country imposing the measure but also any impacts (positive or negative) it would have in another country. This form of social welfare analysis can be controversial as it in general requires comparing the costs and benefits of particular policies. While it may be difficult (or impossible) to quantify all the costs and benefits of a particular policy, the process of analysing all the costs and benefits, even if they are not quantified, may help improve decision-making.⁵

³ For a discussion of instrument choice and norms or values, see C. Sunstein, 'Social Norms and Social Roles' (1996) *Columbia Law Review* 903, R. McAdams, 'The Origin, Development and Regulation of Norms' (1997) 96 (2) *Michigan Law Review* 338, and A. Green, 'You Can't Pay Them Enough: Subsidies, Environmental Law and Social Norms' (2006) 30 *Harvard Environmental Law Review* 407.

⁴ Note that the broader, social welfare version of efficiency encompasses the other factors as the social welfare function would include the costs and benefits to the environment from the policy and, depending on the weights of the social welfare function, could reflect the preferences of the society for equity.

⁵ Cass Sunstein, *Risk and Reason* (Cambridge: Cambridge University Press, 2002), Richard Revesz and Robert Stavins, *supra* note 1, and Richard Posner, *Catastrophe: Risk and Response* (Oxford: Oxford University Press, 2004). See Frank Ackerman and Lisa Heinzerling, *Priceless* (New York: New Press, 2004)

The narrower version of efficiency is, in essence, cost-effectiveness. It involves ensuring that whatever the environmental goal, it is met at least cost. All costs should be included, such as the costs of abatement equipment, the public costs of administering the regime (including the information costs of developing or monitoring the regulations and enforcement costs), and the private compliance costs. These costs can change over time and therefore it is important to consider the dynamic effects of a measure, such as the extent to which the measure fosters technological innovation.⁶

Equity

Policies can distribute the costs and benefits of addressing climate change very differently. For example, a carbon tax may provide benefits to society as a whole but impose a heavier burden on particular sectors such as low-income groups. It may be possible to offset potential negative distributional impacts; for example, through using the revenue from the tax to reduce the taxes on the lower-income groups. It is important to examine the extent to which measures designed to offset the distributional impacts actually end up reducing the environmental effectiveness or efficiency of the policy. Some tax designs will have this effect more than others. For example, a carbon tax could involve exemptions for particular groups in order to spare them the costs of the policy, but of course any such exemptions are likely to reduce the environmental effectiveness of the tax and may also reduce the efficiency of the measure for dealing with climate change (increasing the cost to achieve the same level of emission reductions). An alternative to the approach of providing exemptions that would preserve environmental benefits is a revenue-neutral tax such as that imposed in British Columbia in Canada, where the tax not only is revenue-neutral but achieves equity goals by including protection for lower-income individuals.⁷ A particular society may decide that the costs of adjusting for distributional impacts may be warranted by the added fairness of the policy, but it is important to understand the trade-offs when choosing the optimal policy.

Political feasibility

The final factor we discuss is the political feasibility of the particular measure. As we have seen recently, environmental taxes may be difficult to

(arguing that cost-benefit analysis is inappropriate in environmental law as environmental impacts are not quantifiable or commensurable with monetary costs).

⁶ Revesz and Stavins, *supra* note 1.

⁷ British Columbia, Background: Balanced Budget 2008, online at: www.bcbudget.gov.bc.ca/2008/backgrounders/background_carbon_tax.htm (date accessed: 3 March 2010).

put in place in many countries, such as the US and Canada (at least federally). Other countries have been able to put taxes in place but they contain significant exemptions to make them politically feasible. Conversely, governments may be able to put in place an emissions trading scheme even though such schemes are in effect very similar to taxes in terms of raising the costs of production.⁸ Subsidies are often the most politically feasible measure as the benefits (at least the narrow economic benefits) are clearly visible whereas the costs (in terms of revenue raising) are more diffuse and less transparent. It therefore can be politically difficult to put in place an optimally effective, efficient and fair policy, although there is a connection between political feasibility and these other factors such as fairness. Political feasibility can be a particularly troublesome factor for the WTO to review if measures are challenged. We will discuss how WTO panels or the Appellate Body review a policy that has trade impacts where the government imposing the policy argues that a less trade restricting policy is not politically feasible.

Constraining and furthering policy From the perspective of governments seeking to take action to address climate change, international trade rules may have both negative and positive implications. On the negative side, trade rules may constrain their ability to take optimal domestic measures to address climate change. On the positive side, trade agreements and institutions may be able to assist countries in meeting their obligations.

Constrains on actions Member countries of the WTO are obliged to abide by the rules set out in the various covered Agreements. In particular, under the GATT, countries must refrain from taking actions that discriminate between their trading partners (the most-favoured-nation or MFN principle) and must also ensure that they do not discriminate against foreign producers in favour of their own domestic producers (the National Treatment principle). Similarly, the rules set out in the Subsidies and Countervailing Measures (SCM) Agreement seek to prevent discrimination by restraining the freedom of countries to provide subsidies to domestic producers. The broad categories of domestic measures that may be constrained pursuant to these various obligations are: (i) regulations and domestic emission trading systems, (ii) taxes, (iii) subsidies and (iv) border tax adjustments.

The potential problem with regulations is that, under WTO rules, they

⁸ For a discussion of the characteristics of carbon taxes and emissions trading schemes, and the advantages and disadvantages of each, see Chapter 6.

might be considered trade restrictive and discriminatory if in fact they favour domestic companies at the expense of foreign competitors, or if they favour one trading partner over another. Whether or not they do so will depend on their design and manner of application and may be a source of controversy requiring resolution by the WTO Dispute Settlement Body.

Assisting countries to meet obligations Trade agreements may support countries in meeting their emission reduction commitments. First, countries may be able to use trade sanctions to force others to participate in and/or comply with a climate change agreement. The use of trade sanctions or a credible threat of the same may help governments in the target country deal with domestic interest groups who oppose climate change measures. The government will be able to point to external rules that bind it, thus minimizing the opportunity for domestic interest groups to influence decisions. Second, countries may be able to use trade measures to allay the competitiveness concerns of domestic industries regarding climate change measures. If governments are able to assuage these concerns by taking measures to combat loss of competitiveness, then again trade rules may be a positive force in helping countries meet their emission reduction commitments. We pay particular attention to the possible use of border tax adjustments in this regard.

4.3 UNILATERAL ACTION TO FORCE OTHER COUNTRIES TO TAKE CLIMATE CHANGE ACTION

As noted in Chapter 2, a key difficulty in designing an international climate change regime is that addressing climate change through reducing GHG emissions is an 'additive public good', that is, a public good that depends on the aggregate reductions of GHG emissions by a large number of countries.⁹ As with other public goods, the risk with additive public goods

⁹ As noted in Chapter 2, a public good is a good that is non-excludable (one party cannot stop others from enjoying the benefits of the good) and non-rivalrous (one party's enjoyment of the good does not reduce the amount for others). See Scott Barrett, 'Proposal for a New Climate Change Treaty System' (2007) 4 (3) *The Economists' Voice* Article 6. Barrett describes reducing concentrations of GHG in the atmosphere as an additive or 'aggregate efforts' public good as opposed to a 'single best efforts' public good (such as stopping an asteroid from hitting the earth), which can rely on unilateral action, or a 'weakest link' public good (such as stopping the spread of a disease), which depends on every country being involved.

is that some parties will free-ride on the efforts of others. For example, countries may refuse to sign on to a climate change agreement, may not make any substantial international commitments under the agreement, or may commit to reductions but fail to fulfil their commitments. The Kyoto Protocol provides an example of all of these types of free-riding. Some countries refused to sign on. Others, such as developing countries (many of which are major emitters) signed on but did not commit to any reductions. Still others, such as Canada, committed to reductions but will not meet their commitments.¹⁰

Trade measures taken by countries unilaterally may overcome the free-rider problem and foster both participation in a climate change agreement and compliance with commitments states have accepted under an agreement.¹¹ First, trade measures could be used as 'carrots' or positive incentives to countries to either join in a climate change agreement or comply with their commitments.¹² For example, parties to a climate change agreement could offer preferential trade concessions to non-joiners or non-compliers either on specific products related to climate change or more generally on all goods.¹³ Such preferential access would be given on condition that the beneficiary country meets certain emission reduction commitments. An example of the type of model that might be used is the Generalized Scheme of Preferences (GSP) under the GATT, where developed countries act on a unilateral basis to provide preferential market access to goods from developing countries. Often, such access is only given where certain conditions are met, which might include certain

¹⁰ See National Round Table on the Economy and the Environment (NRTEE), *Getting to 2050: Canada's Transition to a Low-emission Future* (Ottawa: NRTEE, 2007).

¹¹ A climate agreement could also allow parties to use trade measures as a means of meeting their climate objectives. For further discussion of this point, see Chapter 14.

¹² Howard Chang, 'An Economic Analysis of Trade Measures to Protect the Global Environment' (1994-95) 83 *Georgetown Law Journal* 2131 (discussing 'carrots' and 'sticks' in promoting environmental protection) and Scott Barrett, *Environment and Statecraft: The Strategy of Environmental Treaty-Making* (Oxford: Oxford University Press, 2003). See also Howard F. Chang, 'Carrots, Sticks, and International Externalities' (1997) 17 *International Review of Law and Economics* 309.

¹³ These types of measures overlap with measures that are more specifically aimed at reducing environmental harm such as reducing subsidies for environmentally harmful industries or liberalizing trade in environmentally friendly goods and services (such as wind turbines). This chapter only examines these measures to the extent they relate to the objective of increasing participation in or compliance with an international climate change regime.

environmental standards or targets being met. This type of conditionality raises legality issues, however, and these are discussed in Chapter 11. Other 'carrots' might include increased investment, technology transfers, and capacity-building in environmental matters.

Second, measures could be taken that eliminate disincentives to participation or compliance. A primary disincentive for governments to take domestic climate change action comes from a loss of competitive advantage if their producers face costs that those in another state do not (because it is either not participating in or not complying with a climate change agreement). Measures to eliminate such disincentives might conceivably take the form of a tax placed on a product at the border when it is being imported from a non-joining or non-complying state or remitted on exports where they are destined for such a state (a 'border tax adjustment'). Regulations or internal taxes on certain characteristics of the product, such as its energy efficiency, might serve the same purpose.

Third, a state could ban the use of energy-intensive products or products that emit GHGs from non-joining or non-complying states. The ban could be implemented at the border, denying entry to any such product to the state but potentially allowing similar domestic goods to remain on the market (which is likely to be problematic under WTO rules). Alternatively, the ban could be imposed in the state for all such products, whether imported or domestically produced.

Finally, countries might wish to unilaterally use trade measures as a 'stick' to explicitly deter non-participation by forcing non-joining states to either sign on to a climate change agreement or to take equivalent efforts to address their emissions. They might also use trade measures to force parties to a climate change regime to comply with their commitments. As will be discussed in Part IV, in either case the trade measure must be severe enough to induce the non-joiner or non-complier to act – that is, the measure must raise the country's costs to such an extent that it provides an incentive for it to join or comply. In addition, the costs of the measure to the sanctioning state must not be so severe that the threat of imposing the measure lacks credibility.¹⁴ These two conditions of severity and credibility will be central to designing an appropriate enforcement mechanism. Issues will also arise as to the political viability of using trade measures as a 'stick'.

¹⁴ See Barrett, *supra* note 12, and Robert N. Stavins and Scott Barrett, *Increasing Participation and Compliance in International Trade Agreements* (Working Paper No. RWP02031, Kennedy School of Government, Harvard University, 2002).

4.4 MULTILATERAL SOLUTIONS

The third set of linkages between trade rules and climate change constitute what we refer to as 'multilateral solutions'. We identify two broad categories of multilateral solutions: first, the inclusion of trade measures within a multilateral environmental agreement (MEA); and second, increasing trade in environmentally beneficial goods and services.

With respect to the first, one potential way to harness trade measures to assist in meeting the goals of climate change is through a climate change agreement. That is, rather than relying on unilateral action by individual countries, the parties to a climate change agreement could incorporate trade measures against non-joiners or non-compliers in the agreement itself. Trade measures have been included in a number of MEAs in order to further the environmental protection objectives advanced by the agreement in question, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and the Montreal Protocol on Substances that Deplete the Ozone Layer. Each MEA uses trade measures differently to achieve its objectives. The most common is to use trade measures as a direct means of minimizing environmental damage by imposing restrictions or conditions on the ability of states to import or export certain products, whether they be harmful to the environment themselves (for example, hazardous chemicals) or where trade itself is harmful to the things sought to be conserved (for example, endangered species). The most extreme measures of this type are import or export prohibitions, while less stringent measures include packaging or labelling requirements that make it more difficult for states to export the goods in question.

A second way in which trade measures may be used in MEAs is to remove obstacles to non-compliance/participation so as to create a level playing field and thus deter free-riding. The Montreal Protocol, for example, provides for the prohibition of imports from and exports to states that are not party to the Protocol. The purpose is to promote broad participation in the Protocol and ensure that the environmental gains made are not undermined by activities in non-parties.¹⁵

Third, trade measures are used to enforce compliance (that is, as a 'stick' to sanction non-complying states). It should be noted, however, that the

¹⁵ Ludvine Tamiotti et al., *Trade and Climate Change: A Report by the United Nations Environment Programme and the World Trade Organization* (Geneva: WTO, 2009) at 13.

MEAs that have used trade measures in this manner have seen trade sanctions as a last resort; their focus has been on promoting and facilitating compliance rather than penalizing non-compliance.¹⁶

The questions that arise in the context of climate change revolve around the potential for including these types of trade measures in a climate change agreement. There are a number of uncertainties and difficulties associated with the legality of such measures under WTO law, including issues that arise when rules in an MEA and the WTO overlap or conflict.

The second multilateral solution that will be discussed is the scope for bringing the environment into trade agreements by reducing the barriers to trade in environmental goods (for example, more environmentally sustainable forms of biofuels) and services and to technology transfer. The WTO's Committee on the Environment (CTE) has been considering the issue of trade in environmental goods and services but has struggled to make progress as countries seek to reach agreement on a core list of environmental goods and services.

PART III

Trade rules and domestic policies

¹⁶ *Ibid.* at 29.