

The WTO and the Kyoto Protocol: Interaction Issues¹

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1. Introduction

This article expands on Brewer (2003b) by providing additional depth to understanding of specific issues concerning WTO-Kyoto Protocol interactions. The article adopts a modified ‘triage’ approach, which classifies points of intersection of the two regimes as (a) highly problematic and clearly in need of further attention, (b) perhaps problematic but less urgent, and (c) apparently not problematic, at least at this point in time. The analysis gives special attention to issues that are particularly problematic because of the likelihood of occurrence of specific conflicts and the significance of their economic and/or political consequences. In order to understand the nature of specific tangible issues that might arise within such interfaces, it is of course necessary to address a variety of specific questions:

¹ This is the second of two companion articles . The first one (Brewer, 2003b) provides an overview of the issues, presents the context in which they have emerged, and discusses concerns about key points of institutional intersection. The current one focuses on a series of specific issues about the interactions of particular provisions in numerous WTO agreements and provisions in the Kyoto Protocol. The articles reflect the comments of participants in the series of meetings for the Transatlantic Dialogue on Climate Change, funded by the German Marshall Fund of the United States. Workshop III was held at CEPS in Brussels on 3 December 2002, and Workshop IV was held at Georgetown University on 11 June 2003. Though it would be inappropriate to name any of the participants individually, I am indebted to them all for their careful attention to the factual details as well as the themes and logic of the analysis.

- Which WTO agreements are applicable to the climate regime – and which are not?
- Are there differences in the implications for the climate regime between the GATT (covering goods) and the GATS (covering services)?
- Would offsetting border measures qualify as ‘exceptions’ according to provisions concerning non-discrimination in GATT Article XX and/or GATS Article XIV?
- Will specific domestic policies and measures undertaken by individual parties to the Kyoto Protocol to achieve climate change mitigation targets be consistent with WTO non-discrimination principles and the provisions of particular WTO agreements?
- Are climate change measures concerning the labeling and certification of energy efficiency compatible with the WTO agreement on technical barriers?
- Are firms’ foreign direct investment (FDI) projects, which are central to the Protocol’s Clean Development Mechanism (CDM) and Joint Implementation (JI) provisions, covered in the WTO by both the GATS and the agreement on Trade Related Investment Measures (TRIMs)?
- Will CDM and JI projects under the Protocol qualify as environmental exceptions under the WTO subsidies agreement?
- Are firms’ projects and/or governments’ policies involving carbon sequestration restricted by the WTO agriculture agreement?
- What are the implications for climate-trade interactions for countries such as the United States that are not parties to the Protocol but are members of the WTO?
- Are regional climate agreements affected by the WTO provisions concerning regional trade agreements?

- Are climate regime issues likely to become involved in the WTO dispute settlement process?

This paper does not attempt to answer conclusively all of these questions; rather it highlights areas of particular concern and/or complexity. Almost inevitably for a subject of such broad scope, some questions remain unanswered and new ones are raised.

As will be noted below, most of the issues considered in this paper concern possible direct interactions between provisions of the Protocol and provisions in WTO agreements; however, some of the issues considered below arise because of actions that could be taken outside the provisions of the Protocol, but motivated by climate-related concerns and with direct implications within the context of the WTO.

The entire range of potential intersections between the Protocol and the WTO can be represented by a matrix in which five of the key elements of the Protocol (emissions trading, CDM, JI, compliance, and domestic policies and measures) are indicated by columns, and the fifty or so WTO agreements are indicated by rows. There are thus nearly 200 points of intersection that could be examined (see Figure 1). In addition, there are important elements of the climate change regime that are developing outside the Kyoto Protocol, and there are many trade and investment schemes based on regions, bilateral relations, and industry sectors, as well as multilateral schemes outside the WTO. Thus, the entire range of climate regime-trade regime interactions extends far beyond the Kyoto Protocol-WTO interactions that are the focus of this paper. Also see, for instance Brack and Gray (2003) for a systematic treatment of a variety of issues about the interactions of multilateral agreements with the WTO, and Charnovitz (2003) on climate and trade regime interactions.

FIGURE 1

The remainder of the paper is organized into the following sections:

2. Off-Setting Border Measures on Imports
3. CDM Emission Reduction Credits and the ‘Free Rider’ Problem
4. Border Tax Adjustments on Exports
5. CDM and JI Projects in Relation to the WTO Subsidies Agreement
6. Emission Permit Allocations in Relation to the WTO Subsidies Agreement
7. Carbon Sequestration in Relationship to the WTO Agriculture Agreement
8. Product Standards in Relationship to the WTO Technical Barriers Agreement
9. Government Procurement
10. Conclusion: Results of the ‘Triage’ Process

2. Off-Setting Border Measures on Imports

One question that has been attracting interest concerns governments’ border measures undertaken in the context of the Protocol to offset the international competitive effects of domestic carbon emission reduction measures such as carbon taxes: Would offsetting border measures qualify as allowable ‘exceptions’ under GATT Article XX and/or GATS Article XIV provisions concerning non-discrimination? Cases undertaken in the future in the context of the WTO dispute settlement process may provide detailed answers to this question. In the meantime, preliminary analyses suggest that the distinction between products and production process methods, which has been central to GATT/WTO dispute cases in the past, will be a key determinant of the fate of such climate-related measures in the WTO. See especially Biermann and Brohm (2003) on offsetting border adjustments, and Charnovitz (2002) on the product-process distinction and related issues.

GATT Article XX provides that ‘Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any Member of measures: ... (b) necessary to protect human, animal or plant life or health; ...’ GATT Article XX also provides in section (g) that ‘measures relating to the conservation of exhaustible natural resources’ are exempted.

The services agreement (GATS) also contains environment-related provisions. Although it does not have an exactly equivalent provision to GATT Article XX (g) concerning ‘exhaustible natural resources’, the GATS preamble and Article XIV(b) are otherwise nearly identical to the provisions of GATT Article XX. Those portions of GATS are as follows: ‘Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where like conditions [cf. ‘the same conditions’ in GATT] prevail, or a disguised restriction on trade in services, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any Member of measures: ... (b) necessary to protect human, animal or plant life or health; ...’

As a result of these provisions and a series of WTO dispute cases concerning potential environmental exceptions to the GATT principle of national treatment, it is possible to construct a ‘logical decision tree’ that represents a series of ‘tests’ that a measure must pass in order for it to be considered an allowable exception (see Figure 2).²

FIGURE 2

² This decision tree has been constructed partly on the basis of the verbal discussion in Sampson (1999). Also see Charnovitz (2002), Hagen and Ferris (2002), Hagen and Weiner (2001), and WTO (2002a).

The tests at steps 2 and 7 may be the most problematic for the climate regime. As for step 7, the truly global dispersion of greenhouse gases means that the affected lives and resources are inevitably in countries other than – as well as in – the country imposing the trade barrier.³ On the other hand, the highly constraining nature of the series of tests portrayed by Figure 2 may have been ameliorated somewhat by the dispute case appellate opinion noted in section 2 above, and it remains to be seen whether and how these issues will be treated in future disputes.

Zhang (1998) has addressed the question of whether border adjustment taxes imposed on imports from countries that have not adopted Kyoto emission reduction targets would conflict with WTO rules, and has concluded that they ‘could fall foul of the like product provisions’ (p. 231) of GATT articles I and III (discussed above). Also see Brack, Grubb and Windram (2000: 87-89) on this issue, and see section 13 below for additional discussion of the WTO dispute settlement process.

Regardless of the legal technicalities and political uncertainties that would be involved in the adoption of off-setting border measures, they are a way of addressing the problem of Kyoto Protocol ‘free riders’ who enjoy the benefits of the ‘public good’ of emissions reductions engendered by a multilateral agreement without paying the costs. However, as (Barrett, 1999) has suggested the conditions for the successful use of trade sanctions to deter free riding may be quite restrictive. He has examined the use of trade sanctions as a way to deter free riding in MEAs using game theoretic concepts. He uses an application to the Montreal Protocol on Substances that Deplete the Ozone Layer to illustrate the concepts and conclusions, but of course the concepts are more generally applicable to other MEAs as well. He concludes that ‘the

³ There is a simple logical issue and an analytically simple solution to this problem – namely, change the WTO phrase ‘are the’ to ‘are there’. Politically, however, such a change would probably not be easy (and perhaps not even possible).

number of cases in which trade sanctions will be both effective and credible is probably very small. The Montreal Protocol appears to be a special case' (Barrett, 1999: 169).

However, a more indirect and possibly more credible and effective approach to the relationship of trade to the free riding on the multilateral climate regime in particular is the focus of the next section.

3. CDM Emission Reduction Credits and the 'Free Rider' Problem

Müller (2002) has imagined a way to impose the loss of business in Kyoto non-parties *without national government trade measures*, thus circumventing WTO rules, which apply to national governments. His proposal is that CDM projects could be screened so that their emission reductions would be certified only if their 'technical means of production ... are manufactured in countries which *have ratified* the Protocol' (p. 58). Thus, as firms develop the sourcing plans for CDM projects, they would have an incentive to select suppliers located in countries that have ratified the Protocol. He offers a hypothetical but realistic scenario to illustrate how this would work with a scenario in which power plants in China are going to be built by a US-based firm, which can source the turbines from a manufacturer in either a Kyoto party or non-party country.

In this example, turbines are of course a major capital equipment item and one of the most expensive components of a power plant, so that the economic stakes are significant for national economies as well as individual firms. Beyond that, however, the more general implication is that the economic stakes represented for diverse industries in many countries by a large number of prospective CDM projects are potentially on the order of tens of billions of dollars over a decade or so.

A variety of issues about the nexus of relationships between the Protocol and the WTO arise from such projects, the international business transactions associated with them, and the roles of governments, firms and multilateral organizations. These issues include the problems of the *national identity* of goods and services produced by multinational firms using highly internationalized productions processes - and the application of WTO rules of origin – matters which Müller addresses. However, a key feature of the proposal is that it operates on similar incentives as direct national-level trade measures such as off-setting tariffs on imports from Kyoto non-parties but focuses on decision-making at the supra-national and sub-national levels rather than the national level.

Whatever further legal and institutional issues may emerge from this possible approach to the free rider problem, it is likely to generate much discussion in both the environmental and trade policy communities. Together with the possibility of off-setting border measures discussed above in the previous section, the economic and political stakes for governments and firms, as well as the future of the multilateral climate and trade regimes, are likely to command the attention of an ever-wider audience.

4. Border Tax Adjustments on Exports

Another indirect approach to the problem of the competitive advantages that might be enjoyed by firms from free-riding non-parties to the Kyoto Protocol would be to grant border adjustments to exports from countries that are parties (Brack, Grubb and Windram, 2000: 75-90). But this raises a variety of complicated and unresolved issues. Among them are the same issues noted above in section 7 and represented diagrammatically in Figure 2 concerning off-setting border measures on imports, namely whether the tests for allowable exceptions under GATT Article XX would be found by a dispute panel to have been successfully met.

However, there are additional complicating factors such as the meaning of ‘like products’, whether domestic carbon taxes could be construed to be ‘cumulative taxes’, and whether the inputs that are taxed are present in the final product. The experience with the US Superfund Chemical Excise tax and the US Ozone-Depleting Chemicals tax may offer useful precedents (see Brack, Grubb and Windram, 2000: 76-81; Hoerner, 1998; Hoerner and Müller, 1996; Westin, 1997). The work of the WTO on border tax adjustments, including Working Body reports in 1960 and 1970, has been reviewed by the WTO Secretariat (1997).

5. CDM and JI Projects in Relation to the WTO Subsidies Agreement

The WTO Agreement on Subsidies and Countervailing Measures (SCMs), as it entered into force at the beginning of 1995, included a provision in Article 8 that subsidies to industry covering up to 20 per cent of the cost of adapting existing facilities to new environmental requirements would not be actionable. However, the provision was limited to five years and thus expired at the end of 1999. Whether it will be re-instituted in the future is unclear.

Non-actionable subsidies are those that cannot be challenged as a basis for undertaking countervailing duties. In Part IV, Article 8; 8.1, the agreement said:

‘The following subsidies shall be considered as non-actionable:...8.2(c) assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms, provided that the assistance:

- (i) is a one-time non-recurring measure; and
- (ii) is limited to 20 per cent of the cost of adaptation; and
- (iii) does not cover the cost of replacing and operating the assisted investment, which must be fully borne by firms; and

- (iv) is directly linked to and proportionate to a firm's planned reduction of nuisances and pollution, and does not cover any manufacturing cost savings which may be achieved; and is available to all firms which can adopt the new equipment and/or production processes'.

These provisions prompt the question of whether CDM and JI projects would qualify as environmental exceptions if those or similar provisions are adopted in the future. Wiser (1999) offers an extensive and detailed analysis of a series of specific questions that arise about the application of WTO rules to CDM projects – including possible violations of MFN and national treatment principles, and many others. He concludes that although GATT rules concerning goods would not apply, GATS rules concerning services would. He further develops scenarios and factual circumstances that could violate GATS rules, and he cautions that the CDM project rules should be developed to minimize the possibility of challenges in the WTO. Peterson (1999: 204-214) has also addressed these issues. She too found that CDM projects rules as well as national policies and the projects themselves can be devised to minimize the risk that they involve 'actionable' subsidies under WTO rules.

If one focuses on international *investment* rules, the situation becomes more complex for two reasons. First, the coverage of investment in the WTO is uneven; there is of course presently no single comprehensive WTO investment agreement. Instead, investment is covered in some sectors in the services agreement, but only according to the highly varying schedules of specific commitments of the signatories. The TRIMs agreement only pertains to a small number of host government restrictions on trade-related aspects of investment projects. Thus, investment projects in goods manufacturing are generally not covered by the WTO, and only in a limited way in services projects. Second, there are international investment agreements outside the

WTO. In particular, there are hundreds of bilateral investment treaties, and there are regional agreements such as the NAFTA that contain important provisions about investment. There are also non-binding, but nevertheless well established, agreements concerning investment at the OECD.

Werksman, Baumert and Dubash (2001) have examined the interactions of this 'investment regime' and the climate regime, and they have found some points of conflict, particularly in regard to CDM projects. Among their 'key findings' are that violations of provisions concerning MFN, pre-establishment screening, or performance requirements might arise. However, they also have a series of specific recommendations for minimizing the risks of such problems.

6. Emission Permit Allocations in Relation to the WTO Subsidies Agreement

There is also an issue about whether the allocation of emission trading permits would conflict with WTO rules, again specifically the subsidies agreement. Brack, Grubb and Windram (2000: xxii) have suggested that 'it is ... probable that the initial allocation of permits [will] fall under the disciplines of the WTO Agreement on Subsidies and Countervailing Measures'. More specifically, Zhang (1998) has suggested that the allocation of emission trading permits could conflict with WTO non-discrimination principles if an allocating government favors domestic firms over foreign firms, or it could conflict with its WTO obligations if it favors some sectors over others, and might thus be considered like an export subsidy (p. 227).

The issue is considered in much detail by Parker (1998), who concludes that the allocation could be 'actionable subsidies' in the terms of the subsidies agreement noted in the

previous section.⁴ Any resolution of the issue would depend in part on whether permits would be considered financial contributions to the firms that receive them - which is itself a difficult issue to resolve. Beyond such issues concerning the applicability of the subsidies agreement and the rationale for applying it in any particular case, there is also an issue about whether a dispute case might challenge an emission trading scheme ‘as a whole’ or only its application to particular products. Parker (1998: 15n9) suggests it is likely to be the latter, not the former.

7. Carbon Sequestration in Relationship to the WTO Agriculture Agreement

The Agreement on Agriculture exempts subsidies in the form of direct payments under environmental programmes from governments’ commitments to reduce domestic support for agricultural production. The exception, however, is subject to certain conditions, and they are quite complex and vague. They can be noted, in part, as follows:

‘Payments (a) Eligibility for ... payments [under environmental programmes] shall be determined as part of a clearly-defined government environmental or conservation programme and be dependent on the fulfillment of specific conditions related to production methods or inputs. (b) The amount of payment shall be limited to the extra costs or loss of income involved in complying with the government programmes’ (Annex II, paragraph 12).

The issue here, then, is whether particular agricultural subsidies for carbon sequestration projects will meet such criteria in order to be exempt from the WTO restrictions. This is an issue that has not yet received much attention – if any – in published studies, or in unpublished ones as

⁴ However, he also notes that a domestic cap-and-trade system ‘does not raise issues’ of MFN or national treatment violations in GATT articles I and III ‘because it does not apply to imported products’ (Parker, 1998); cf. Zhang (1998: 227) noted above in the previous section.

far as I can determine. However, it could become an important matter as government policies embed carbon sequestration subsidies in their larger agricultural subsidy programmes.

8. Product Standards in Relationship to the WTO Technical Barriers Agreement

Another topic requiring further analysis is whether climate change measures concerning the labeling and certification of energy efficiency would be compatible with the WTO Agreement on Technical Barriers (TBT). The Kyoto Protocol provides in Article 2, paragraph 1(a)(i), for domestic energy efficiency policies and measures that will reduce greenhouse gas emissions for ‘enhancement of energy efficiency in relevant sectors of the economy’. However, because it does not explicitly specify the types of policies and measures that would be appropriate, there is uncertainty about whether the particular policies and measures that are actually adopted might conflict with WTO rules.

Again, as Buck and Vereyen (2001: 7) note, the distinction between products and production process methods is critical. Thus, the issues discussed above in the present paper in section 7 and represented diagrammatically in Figure 2 pertain. Buck and Vereyen (2001: 10) conclude that ‘if energy efficiency standards are developed and applied in a transparent, co-operative and non-discriminatory manner, and if a clear link can be established between a measure and the pursuit of climate policy objectives, prospects are good that such measures will not be regarded as incompatible with’ GATT obligations concerning national treatment (Article III) or the exceptions in Article XX.

However, this would not necessarily insure conformity with the requirements of the Technical Barriers to Trade (TBT) agreement, which includes a series of requirements concerning the specific content and application of the standards. For instance, there is a

preference that any national standards be based on widely accepted international standards. Thus, each standard would be subject to possible review by the WTO.

Assuncao and Zhang (2002: 11-12) observe that these issues have already arisen in the case of fuel efficiency standards for motor vehicles proposed by the Japanese government as one way to reduce carbon dioxide emissions and meet their Kyoto targets. The proposal would lower tax rates on vehicles with small engines and high fuel efficiency. The EU raised the prospect of a complaint to the WTO on the grounds that the standard would discriminate against the generally larger imports from Europe in favor of the generally small domestically made Japanese models, and the Japanese government responded with a notification to the WTO TBT Committee that it would in fact introduce new fuel efficiency standards.

On the matter of fuel efficiency standards, Parker (1998; 14) indicates that at least US standards 'are not likely to raise WTO concerns so long as they are crafted in a way that does not discriminate against imported products'. Indeed, there is a WTO dispute panel case (US- Taxes on Automobiles, DS 31) in which the panel ruled that a regulation that had a differential – and more negative – impact on imported vehicles than on domestic vehicles was acceptable.⁵

In sum, efficiency standards are certainly not inherently problematic in relationship to WTO rules, including those in the TBT agreement, even if they apply to imports and in fact reduce import sales. Only a consideration of the facts of individual cases can determine whether there is a problem in this regard.

9. Government Procurement

⁵ At the same time, it did rule that an explicit provision for separate calculations for imported and domestic fleet averages was not acceptable because it was clearly based on a foreign-domestic distinction (Parker, 1998: 14).

At least two studies have raised issues about the compatibility of certain types of government climate mitigation policies with the WTO agreement on government procurement. Buck and Verheyen (2001) examine these issues in detail. They suggest that ‘procurement programmes which take into account the direct energy performance of procured products or services are well within the scope of technical specifications allowed under the [agreement]’ (p. 19). However, they also suggest that there may be a problem with ‘climate change procurement programmes which also refer to the non-product related climate change impacts of products and services. This would apply for example to the purchasing of electricity made from renewable energy sources’ (p. 19).

Assuncao and Zhang (2002) also identify a range of ways that ‘green’ government practices in general and those related to climate change in particular pose questions about possible violations of the government procurement agreement. For instance, a preference to purchase electricity from hydro sources rather than coal-fired sources (particularly if the former are local and the latter foreign) could violate the government purchase provision for national treatment.

However, there are two features of the government procurement agreement that restrict its scope: it is a so-called ‘plurilateral’ agreement that does not include many WTO members, and each signatory excludes sectors from its commitments. Yet, there is a need for more extensive consideration of the nature and extent of the issues posed by the government procurement agreement for climate change mitigation measures in government procurement practices.

10. Conclusion: Results of the ‘Triage’ Process

Notwithstanding the restrictions on the WTO Doha round agenda, issues about the interactions of the climate regime and the trade-investment regime are now on the de facto agenda of environmental and economic diplomacy. Those issues are likely to be addressed in many forums over the next several years. Because the institutionalization of the Kyoto Protocol is still in its formative phase and because the results of the Doha round negotiations will not be known for three or more years, the precise implications of the overlaps between the two regimes are also uncertain.

However, priorities can be established for the agenda - in at least a preliminary way - according to three categories of issues: (1) those that are most problematic; (2) those that might become problematic but are less urgent; and (3) those that do not appear at this point to be problematic.

(1) Interactions that are the most problematic. Some of the rights and obligations of the parties to the Kyoto Protocol and/or WTO agreements are arguably in jeopardy and need diplomatic as well as analytic attention. In particular, the potential use of border measures to offset cross-national differences in the energy costs of goods is in this category. More generally, an interest in finding trade-related ways to impose costs for free riding, which is a vexing issue for multilateral environmental agreements, is likely to put these problematic issues on the agendas of both the climate and trade regimes for several years.

(2) Interactions that are less problematic but that nevertheless warrant further attention. These include CDM and JI projects in relation to the WTO subsidies agreement, efficiency standards in relationship to the WTO technical barriers agreement, and carbon sequestration in relationship to the WTO agriculture agreement. As parties to the Protocol develop and implement their own individual policies and measures to achieve emissions targets, compatibility

with WTO rules could become a recurrent issue. More generally, the nexus of investment rules (inside and outside the WTO) with the climate regime needs further attention. An additional specific item in this category is the US proposal to include ‘air quality and climate’ in its GATS specific commitments on market access and national treatment. Although this appears to offer win-win possibilities, it may have larger implications needing careful assessment.

(3) *Interactions that are the least problematic at this time.* Because the government procurement agreement is only a ‘plurilateral’ agreement not including many members of the WTO and because it excludes many areas from its coverage by individual country opt-outs, it is not likely to be problematic for climate regime-trade regime interactions. Although supporting services for international emissions trading might be covered by the GATS, they do not need immediate attention.

References

- Assuncao, Lucas, and ZhongXiang Zhang (2002). Domestic Climate Change Policies and the WTO, UNCTAD Discussion Paper Series (Geneva: UNCTAD).
- Barrett, Scott (1999). The Credibility of Trade Sanctions in International Environmental Agreements, in Per G. Fredericksson, (ed.), *Trade, Global Policy, and the Environment*, World Bank Discussion Paper No. 402 (Washington, DC: The World Bank); pp. 161-172.
- Biermann, Frank, and Rainer Brohm (2003). Implementing the Kyoto Protocol Without the United States: The Strategic Role of Energy Tax Adjustments at the Border. Global Governance Working Paper No. 5.
- Brack, Duncan, and Kevin Gray (2003). Multilateral Environmental Agreements and the WTO. London: RIIA.
- Brack, Duncan, with Michael Grubb and Craig Windram (2000). *International Trade and Climate Change Policies* (London: RIIA and Earthscan).
- Brewer, Thomas L. (2003a). 'Multinationals, the Environment and the WTO: Issues in the Environmental Goods and Services Sector and in Climate Change Mitigation,' in Sarianna Lunden, Alan Rugman and Alain Verbecke (eds.) *Multinationals, the Environment and Global Competition* (Elsevier).
- Brewer, Thomas L. (2003b). 'The Trade Regime and the Climate Regime: Institutional Evolution and Adaptation', *Climate Policy*, 3,4: 329-341.
- Buck, Matthias, and Roda Verheyen (2001). International Trade Law and Climate Change – A Positive Way Forward (Bonn).

- Charnovitz, Steve (2002). 'The Law of Environmental 'PPMs' in the WTO: Debunking the Myth of Illegality', *The Yale Journal of International Law*, 27, 1: 59-110.
- Charnovitz, Steve (2003). 'Trade and Climate: Potential Conflicts and Synergies'. Washington, DC: Pew Center on Global Climate Change.
- Grubb, Michael, Duncan Brack and Christian Vrolijk (1999). *The Kyoto Protocol: A Guide and Assessment* (London: RIIA and Earthscan).
- Hagen, Paul E., and Richard J. Ferris (2002). Trade and Environment Update: An Introduction to the Rules of the World Trade Organization and Their Relationship to Environmental, Health and Safety Measures, in *The Global Business Dialogue, NFTC, WITA, Program, Truth & Consequences: Environment and Investment in the WTO* (Washington, DC); pp. 31-57.
- Hagen, Paul E., and John Barlow Weiner (2001). 'An Introduction to the Rules of the WTO: An Environmental, Health and Safety Perspective', in *Trade and the Environment, The WTO, and MEAs* (Washington, DC: Heinrich Boll Foundation); pp. 13-32.
- Hoerner, J. Andrew (1998). The Role of Border Tax Adjustments in Environmental Taxation: Theory and US Experience, paper delivered at Institute for Environmental Studie' International Workshop on Market-Based Instruments and International Trade (Amsterdam).
- Hoerner, J. Andrew, and Frank Müller (1996). Carbon Taxes for Climate Protection in a Competitive World (Swiss Federal Office for International Economic Affairs).
- Müller, Benito (2002). 'The Kyoto Mechanisms: Linking Technology to Ratification', *Journal of World Trade*, 36, 1: 57-66.

- Parker, Richard W. (1998). *Designs for Domestic Carbon Emissions Trading: Comments on WTO Aspects* (Washington, DC: The H. John Heinz III Center for Science, Economics and the Environment).
- Petsonk, Annie (1999). 'The Kyoto Protocol and the WTO: Integrating Greenhouse Gas Emissions Allowance Trading into the Global Market Place,' *Duke Environmental Law and Policy Forum*, 10, 1: 185-220.
- Sampson, Gary (1999). 'WTO Rules and Climate Change: The Need for Policy Coherence.' In Chambers, W. Bradnee, ed. *Global Climate Governance: A Report on the Inter-Linkages between the Kyoto Protocol and Other Multilateral Regimes* (Tokyo: United Nations University); ch. 4.
- Werksman, Jacob, Kevin A. Baumert and Navroz K. Dubash (2001). *Will International Investment Rules Obstruct Climate Protection Policies?*, *Climate Notes* (Washington, DC: World Resources Institute).
- Westin, Richard A, (1997). *Environmental Tax Initiatives and Multilateral Trade Agreements: Dangerous Collisions* (The Hague: Kluwer Law International).
- Wiser, Glenn M. (1999). 'The Clean Development Mechanism Versus the World Trade Organization: Can Free-Market Greenhouse Gas Emissions Abatement Survive Free Trade?,' *Georgetown International Environmental Law Review*, 11, 3: 531-598.
- World Trade Organization [WTO] (1995). *The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts* (Geneva: WTO).
- World Trade Organization [WTO] 1997. *Taxes and Charges for Environmental Purposes: Border Tax Adjustment* (Geneva: WTO).

World Trade Organization [WTO] (2002a). Committee on Trade and Environment. 'Multilateral Environmental Agreements (MEAs) and WTO Rules; Proposals Made in the Committee on Trade and Environment (CTE) from 1995-2002' (Geneva: WTO).

Zhang, Zhong Xiang (1998). 'Greenhouse Gas Emissions Trading and the World Trade System', *Journal of World Trade*, 32, 5: 219-239.

Figure 1

Matrix of Potential Interactions between WTO Agreements and Kyoto Protocol

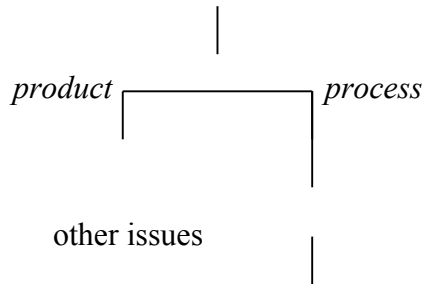
WTO Agreements	Kyoto Protocol Provisions				
	Emissions Trading	Clean Development Mechanism	Joint Implementation	Compliance	Domestic Policies and Measures
GATT 94					
Agriculture					
Sanitary and Phytosanitary Measures					
Textiles and Clothing					
Technical Barriers to Trade					
Trade-Related Investment Measures (TRIMs)					
Preshipment Inspection					
Rules of Origin					
Import Licensing Procedures					
Subsidies and Countervailing Measures					
Safeguards					
Services (GATS)					

Trade-Related Aspects of Intellectual Property Rights (TRIPs)					
Settlement of Disputes					
Trade Policy Review Mechanism					
Civil Aircraft					
Government Procurement					
Dairy					
Bovine Meat					

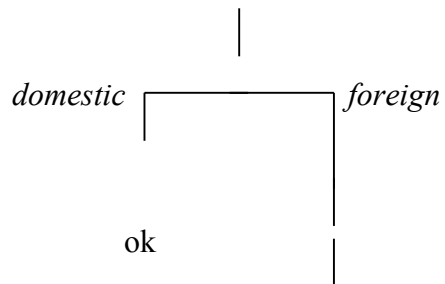
Figure 2

Decision Tree for Exceptions to GATT Article XX

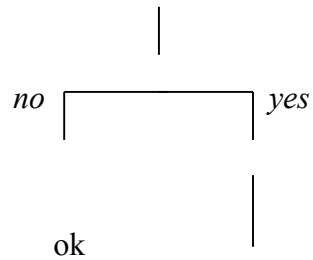
1. Is the target a product or a process?



2. Is the process domestic or foreign?

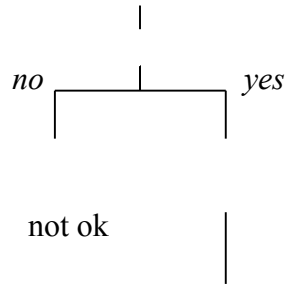


3. Does the measure discriminate against 'like products'?

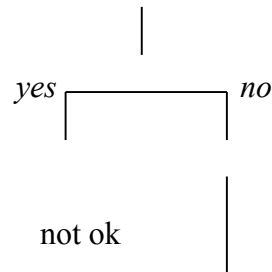


4. Is the measure 'necessary' to protect the environment?

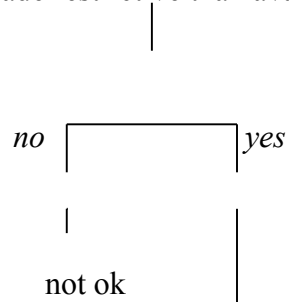




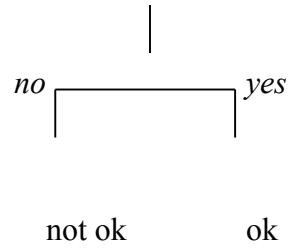
5. Does the measure constitute ‘arbitrary or unjustifiable’ discrimination or a ‘disguised restriction’ on trade?



6. Is the measure less trade restrictive than available alternatives?



7. Are the affected lives or resources in the country imposing the barrier?



[Figure 2 continued]

\If 4, 5, 6 or 7, not ok/

8. Does the measure qualify for a GATT Article IX waiver?

