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# CLIMATE AND TRADE POLICIES IN A POST-2012 WORLD



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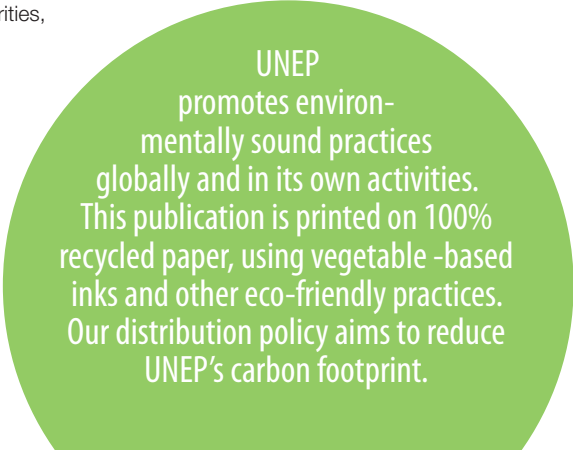
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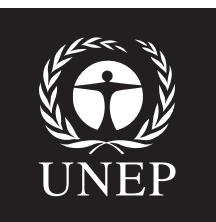
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# CLIMATE AND TRADE POLICIES IN A POST-2012 WORLD



# The United Nations Environment Programme

## United Nations Environment Programme

The United Nations Environment Programme (UNEP) is the overall coordinating environmental organization of the United Nations system. Its mission is to provide leadership and encourage partnerships in caring for the environment by inspiring, informing and enabling nations and people to improve their quality of life without compromising that of future generations. In accordance with its mandate, UNEP works to observe, monitor and assess the state of the global environment, improve the scientific understanding of how environmental change occurs, and in turn, how such change can be managed by action-oriented national policies and international agreements. UNEP's capacity building work thus centers on helping countries strengthen environmental management in diverse areas that include freshwater and land resource management, the conservation and sustainable use of biodiversity, marine and coastal ecosystem management, and cleaner industrial production and eco-efficiency, among many others.

UNEP, which is headquartered in Nairobi, Kenya, marked its first 35 years of service in 2007. During this time, in partnership with a global array of collaborating organizations, UNEP has achieved major advances in the development of international environmental policy and law, environmental monitoring and assessment, and the understanding of the science of global change. This work also supports the successful development and implementation of the world's major environmental conventions. In parallel, UNEP administers several multilateral environmental agreements (MEAs) including the Vienna Convention's Montreal Protocol on Substances that Deplete the Ozone Layer, 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 (SBC), the Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention, PIC) and the Cartagena Protocol on Biosafety to the Convention on Biological Diversity as well as the Stockholm Convention on Persistent Organic Pollutants (POPs).

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The mission of the Division of Technology, Industry and Economics (DTIE) is to encourage decision makers in government, local authorities and industry to develop and adopt policies, strategies and practices that are cleaner and safer, make efficient use of natural resources, ensure environmentally sound management of chemicals, and reduce pollution and risks for humans and the environment. In addition, it seeks to enable implementation of conventions and international agreements and encourage the internalization of environmental costs. UNEP DTIE's strategy in carrying out these objectives is to influence decision-making through partnerships with other international organizations, governmental authorities, business and industry, and non-governmental organizations; facilitate knowledge management through networks; support implementation of conventions; and work closely with UNEP regional offices. The Division, with its Director and Division Office in Paris, consists of one centre and five branches located in Paris, Geneva and Osaka.

## **Economics and Trade Branch**

The Economics and Trade Branch (ETB) is one of the five branches of DTIE. ETB seeks to support a transition to a green economy by enhancing the capacity of governments, businesses and civil society to integrate environmental considerations in economic, trade, and financial policies and practices. In so doing, ETB focuses its activities on:

1. Stimulating investment in green economic sectors;
2. Promoting integrated policy assessment and design;
3. Strengthening environmental management through subsidy reform;
4. Promoting mutually supportive trade and environment policies; and
5. Enhancing the role of the financial sector in sustainable development.

Over the last decade, ETB has been a leader in the area of economic and trade policy assessment through its projects and activities focused on building national capacities to undertake integrated assessments – a process for analyzing the economic, environmental and social effects of current and future policies, examining the linkages between these effects, and formulating policy response packages and measures aimed at promoting sustainable development. This work has provided countries with the necessary information and analysis to limit and mitigate negative consequences from economic and trade policies and to enhance positive effects. The assessment techniques and tools developed over the years are now being applied to assist countries in transitioning towards a green economy.

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# The ADAM Project

The ADAM Project (“Adaptation and Mitigation Strategies: Supporting European Climate Policy”) lasted from 2006 through 2009 and was funded as an ‘integrated project’ by a grant from the European Commission under its sixth framework research programme. ADAM has been supporting EU policy development for a post-2012 international climate regime and has informed the emergence of new European adaptation and mitigation strategies. In total, more than one hundred researchers from twenty-six institutes in Europe, India and China were part of the ADAM Project.

Within the ADAM Project, the work package on “Post-2012 Options in Global Climate Governance” examined different scenarios for the overarching architecture of global climate governance beyond 2012; the emerging role of privatized and market-based governance mechanisms for climate change mitigation and adaptation; and policy options for the adaptation of regions, countries and international institutions to the impacts of climate change.

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# Foreword

*Climate and Trade Policies in a Post-2012 World* is a collection of short forward-thinking articles by leading experts on the relationship between trade and climate change policies. The idea for developing this publication was conceived at the “International Workshop on Post-2012 Climate and Trade Policies”, jointly organized in September 2008 by the United Nations Environment Programme (UNEP) and the EU-funded ADAM project (“Adaptation and Mitigation Strategies: Supporting European Climate Policy”). The authors contributing to this publication were active participants in the workshop and their articles are in many cases based on background notes provided for the workshop.

The groundbreaking dialogue among Trade Ministers in December 2007 during the United Nations Framework Convention on Climate Change negotiations in Bali, Indonesia stimulated intense research and discussions on potential areas of synergy and conflict between the trade and climate change regimes. The dialogue itself was convened in recognition that climate change represents a challenge not only for the environment, but also for future economic prosperity and security. The Ministers focused their discussions on how international trade can best support climate change objectives and called on more analysis and evidence on the linkages between international trade, development and climate change.

The aim of this publication is to respond to this call by providing a collection of short articles that examine the future interplay between climate and trade policies and institutions. The authors, who all provided contributions in their personal capacities, were encouraged to analyse and make recommendations for strengthening the relationship between trade and climate policies. This thought-provoking set of articles focuses on international, regional and national policies and institutions relevant to the implementation of trade-related climate change measures. Issues such as the acceleration of technology transfer and the potential of regional trade agreements and border adjustment measures are both discussed and put into a broader perspective.

It is hoped this publication will contribute to the larger international discourse on the relationship between trade and climate change that is currently taking place, and thus help further the debate on the design and implementation of a future climate regime.



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# List of Acronyms and Abbreviations

ADAM	Adaptation and Mitigation Strategies: Supporting European Climate Policy
APP	Asia-Pacific Partnership on Clean Development and Climate
ASEAN	Association of Southeast Asian Nations
BAM	Border adjustment measure
BAP	Bali Action Plan
BIT	Bilateral investment treaty
CDM	Clean Development Mechanism
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> -eq.	Carbon dioxide equivalent
COP	Conference of the Parties
CTE	Committee on Trade and Environment
CTE-SS	Committee on Trade and Environment Special Session
DMD	Doha Ministerial Declaration
DR-CAFTA	Dominican Republic-Central America Free Trade Agreement
EBRD	European Bank for Reconstruction and Development
ECA	Environmental cooperation agreement
EGS	Environmental goods and services
EGTT	Expert Group on Technology Transfer
ETS	Emissions trading system
EU	European Union
€	Euro
FDI	Foreign direct investment
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GHG	Greenhouse gas
Gt	Gigatonne (one billion metric tons)
ICAO	International Civil Aviation Organization
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
IPR	Intellectual property right
MDGs	Millennium Development Goals
MEA	Multilateral environmental agreement
MEF	Major Economies Forum on Energy and Climate



MFN	Most favoured nation
NAFTA	North American Free Trade Agreement
NGO	Non-governmental organization
NZTCEP	New Zealand Thailand Closer Economic Partnership
ODA	Official development assistance
ODS	Ozone depleting substance
ppm	Parts per million
OECD	Organization for Economic Co-operation and Development
RD&D	Research, development and deployment
RTA	Regional trade agreement
SCM	Subsidies and Countervailing Measures
SMEs	Small and medium-sized enterprises
SO <sub>2</sub>	Sulfur dioxide
STO	Specific trade obligation
TPSEP	Trans-Pacific Strategic Economic Partnership
TREM	Trade-related environmental measure
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States of America
US\$	United States dollar
VAT	Value-added tax
WTO	World Trade Organization

# Introduction - Climate and Trade Policies in a Post-2012 World

*Lutz Weischer, Benjamin Simmons, Harro van Asselt, and Fariborz Zelli*

## 1. The climate challenge—setting the context

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### **1.1. The defining challenge of our age**

Over the last few years, climate change has moved to the forefront of public attention, media headlines and political discourse. It has become increasingly clear that climate change is one of the greatest challenges the world has ever faced. The science is unequivocal—the latest report by the Intergovernmental Panel on Climate Change (IPCC), the world’s leading scientific authority in the field, presents strong and robust evidence that global temperatures are increasing, mainly due to human influences. For instance, 11 of the last 12 years are among the 12 warmest years ever recorded in terms of global surface temperature.<sup>1</sup>

A global consensus is emerging that the increase in atmospheric temperature should be limited to around 2°C above pre-industrial levels in order to prevent the worst impacts of climate changes. In order to keep temperatures within this range, the IPCC’s Fourth Assessment Report argues that global greenhouse gas (GHG) emissions must start declining by 2015.<sup>2</sup> For industrialized countries, which are responsible for most of the GHGs already in the atmosphere, this implies implementing drastic cuts immediately; the latest IPCC Report suggests that compared to 1990 levels, industrialized countries might have to reduce their emissions by 25 to 40 per cent by 2020 and 80 to 95 per cent by 2050.<sup>3</sup> Thus, there is little time left to avoid the worst impacts of climate change—ambitious action is required now. As United Nations Secretary General Ban Ki-moon aptly noted, climate change is “the defining challenge of our age”.<sup>4</sup>

Climate change is a global challenge that requires a global answer. In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was established with the objective of stabilizing GHGs in the atmosphere at a level that would prevent dangerous anthropogenic interference with the Earth’s climate system. In 1997, this objective was further specified in the Kyoto Protocol, which defined binding emissions reduction targets for industrialized countries. The first commitment period of the Kyoto Protocol will end in 2012 and negotiations are under way to define the shape and contents of a post-2012 agreement. At the Bali Climate Change Conference in late 2007, delegates agreed on a “Bali Road Map” that sets a course to reach a post-2012 deal at the climate conference in Copenhagen in December 2009. In terms of climate change, 2009 is a critical year for action.

### **1.2. Climate change impacts trade—trade impacts climate change**

Climate change represents more than a traditional environmental challenge that can be dealt with by specialized negotiators and environmental agencies alone—it will have, and already has significant impacts on all of society, including the economy. The Stern Review, considered by many as the most comprehensive study on the economics of climate change, has calculated that the impacts of unabated climate change would be equivalent to a loss of at least 5 per cent of global gross domestic product (GDP) each year and could reach as much as 20 per cent of global GDP. This led Stern to conclude that climate change is the “greatest market

failure the world has ever seen”, particularly given that the cost of action on climate change mitigation is estimated at only around 1 per cent of global GDP.<sup>5</sup>

Climate change presents particular risks for developing countries.<sup>6</sup> For instance, even if average temperatures

were stabilized at 2.5°C above pre-industrial levels, 75–250 million people in Africa would experience water stress as early as 2020 as a consequence. Some countries in Africa may also suffer from a 50 per cent decline in agricultural yields. In general, the IPCC found a profound risk to the productive base in agriculture, forestry and fisheries in many developing countries. These are precisely the economic sectors that many of these countries depend on for export revenue.

If the world is to avoid the worst impacts of climate change a fundamental restructuring of the economy is needed that places it onto a low-carbon path. Although this clearly presents significant challenges, it also brings huge economic opportunities. According to one measure from the Stern Review, the benefits over time of actions to shift the world onto a low-carbon path could be in the order of US\$ 2.5 trillion each year and markets for low-carbon technologies would be worth at least US\$ 500 billion, and perhaps much more by 2050 if the world acts on the scale required.<sup>7</sup>

The required change in consumption and production patterns will neither be easy to achieve nor occur without seriously altering global trade patterns. In addition, approaches to reduce GHG emissions might affect the international competitiveness of countries and hence reduce their willingness to endorse or implement such measures. Both climate change and measures taken to combat it will thus have an impact on international trade.

Conversely, trade also impacts on climate change, in both synergistic and detrimental ways. For instance, it can spur the proliferation of climate-friendly technologies, yet it also stimulates economic activities that

induce increased GHG emissions and leads to increased transportation of goods.

***“In terms of climate change, 2009 is a critical year for action”***

### ***1.3. Considering linkages in 2009 to shape the world beyond 2012***

Overlaps between climate change and trade policies therefore are inevitable, and in fact are already evident, as many of the contributions to this publication illustrate. This publication comes at a crucial point in time for the future of both the climate and trade regimes. Intense negotiations in the climate regime are underway as policymakers try to reach agreement on a post-2012 climate accord. These negotiations are taking place in the context of the current economic crisis and therefore trade and competitiveness concerns are beginning to play a much larger role. Likewise, negotiators at the World Trade Organization (WTO) are trying to reach agreement under the WTO Doha Round of trade talks at a time when fears of trade protectionism are on the rise. Decisions in these multilateral regimes—but also more broadly in regional, bilateral and national arenas—are likely to greatly influence the future of both international trade and the global climate. However, before analysing these different levels of policymaking in more detail, it is useful to make some general observations on the relationship between trade and climate policies.

## 2. Trade and climate policies—promise and peril

---

### ***2.1. From mutual avoidance to mutual supportiveness***

For years, the linkages between climate and trade policies have been debated among specialists and academics while policy communities have approached potential overlaps with caution. This is slowly changing, however, as the climate challenge is becoming increasingly urgent. During the 2007 UNFCCC Bali Conference of the Parties, an Informal Trade Ministers' Dialogue on Climate Change was held, where 32 trade ministers emphasized the need for increased high-level engagement in order to improve the mutual supportiveness of the climate and trade regimes. This meeting was followed by three major international workshops on climate change and trade in 2008—one organized by the United Nations Environment Programme (UNEP) in February in Geneva, one organized by the Government of Denmark in June in Copenhagen, and one organized by UNEP and the ADAM project ("Adaptation and Mitigation Strategies: Supporting European Climate Policy") in September in Geneva again. The workshops helped in identifying a number of key issues in the climate-trade interface and provided an opportunity to discuss potential solutions. This publication builds on the presentations and discussions at the workshop in September. It is meant to provide a number of short forward-looking articles on the linkages between trade and climate change.

The relationship between the trade and climate regimes is complex and has often been characterized by mutual avoidance rather than mutual supportiveness. The use of trade-related measures has so far been eschewed under the UNFCCC or Kyoto Protocol, even if they have been used in other multilateral environmental agreements, such as the Montreal Protocol for the

Protection of the Ozone Layer. Moreover, climate negotiators have typically avoided trade-related issues, preferring to defer these issues to the WTO. In a similar vein, the WTO has been very cautious in addressing climate change, often highlighting that such issues are more suitably decided within the climate change regime.

As there is a real chance that trade-related climate measures will be adopted in the post-2012 period, such mutual avoidance will not suffice. The trade-climate linkages will have to be addressed somewhere. While most trade policymakers would agree that the WTO can provide assistance in making such measures transparent, predictable and fair, they also stress that they cannot decide which climate policies are appropriate and thus need guidance from the climate regime. The climate regime therefore has an important role to play in developing a coherent and fair multilateral framework for trade-related climate policies.

One difficulty in achieving mutual supportiveness instead of mutual avoidance lies in the different perspectives of the two policy communities. A climate policymaker might ask: "How can the trade regime contribute to climate change mitigation and adaptation?" And in cases where it cannot: "How do we ensure that trade law does not stand in the way of climate change action?" In contrast, for a trade policymaker, the question might be: "How can we ensure the climate is protected without creating trade distortions or unfair trade practices?" Finally, others would stress that this is not only about climate and trade, but ask: "What does this all mean for development?" The articles presented in this publication touch on these various questions and offer some potential explanations and solutions.

### 3. Multilateral measures—the challenge of consensus

#### 3.1. Considering the relationship: principles and concepts

As *Robyn Eckersley* reminds us, it is not enough to look at conflict or coherence between the concrete rules of the trade and climate regimes. To really understand the relationship between the regimes, we need to analyse the underlying principles and discourses from a historical perspective. At the level of principles, there are some tensions as the climate regime's principle of "common but differentiated responsibilities" seems at times difficult to reconcile with the rules and principles of trade law. "Common but differentiated responsibilities" call for developed countries to cut their emissions first, while allowing developing countries additional carbon space to grow. According to this principle, countries will have to be treated differently, while the trade regime aims for an open and non-discriminatory trading system which treats all partners equally.

Nonetheless, the regimes share a number of general principles, such as the endorsement of

sustainable development, economic growth and an open international economy. These shared principles fit within the frame of the dominant neoliberal discourse of the early 1990s when both regimes emerged. The climate regime can be seen as a reflection of a "minimalist or default-approach to trade-environment integration", a discourse that posits compatibility of climate protection, economic growth and trade liberalization. This discourse has helped to manage potential conflict between the regimes. According to Eckersley, when claiming that the WTO is undermining the climate regime, environmental

non-governmental organizations tend to overlook that the principles of neoliberal environmentalism have in fact been endorsed by climate policymakers when they adopted the UNFCCC in 1992. This "harmonious" relation may, however, come under pressure in the future, particularly if unilateral trade measures are adopted to address climate change challenges.

#### 3.2. Opportunities for action in the multilateral trade and climate regimes

At the multilateral level, a number of policies can be envisaged that would help to ensure trade supports climate change mitigation or, at a minimum, limit potential adverse impacts. As always in multilateral negotiations involving many countries, the principal challenge lies in developing rules that are acceptable to everyone, possibly as part of a larger package deal. Institutionally, the question is whether such rules should be developed and applied within the trade or the climate regime.

***"The relationship between the trade and climate regimes is complex and has often been characterized by mutual avoidance rather than mutual supportiveness"***

As *Aaron Cosby* demonstrates in his overview of possible multilateral measures, both regimes offer opportunities. Within the WTO, proposals for action include liberalization of trade in environmental goods and services (EGS), creating additional flexibilities under the Agreement on Trade-Related Aspects of Intellectual Property Rights to facilitate the transfer of low-carbon technologies, and a possible agreement defining the conditions when unilateral trade measures, such as border adjustment measures, would be acceptable. Cosby notes that all of these areas might hold some potential, but cautions

against overestimating their impact in terms of emissions reductions. With respect to EGS liberalization he also notes that goods should be chosen based on their environmental merits, but that the type of environmental standard-setting required would go beyond the competence of the WTO. He therefore suggests that it might be useful for the WTO to seek outside assistance in choosing goods for liberalization, for instance from institutions associated with the climate regime. The most promising area for action within the WTO identified by Cosbey is the elimination or reduction of fossil fuel subsidies and increased protection for climate-friendly subsidies, such as research and development for renewable energy.

Concerning the climate regime and its potential use of trade measures, an analogy is often made with the Montreal Protocol, which successfully used trade measures to support its implementation. Cosbey shows, however, that this analogy can be misleading as the context for the ozone and climate regimes is fundamentally different. The scope of economic activities concerned and the amount of financing needed is much higher in the case of climate change. It will therefore be indispensable to mobilize massive investment in the climate sector and to remove barriers that currently inhibit such investment. A multilateral agreement on ways to promote such investment would be a difficult but rewarding way forward.

### ***3.3. Trade measures in a post-2012 multilateral climate agreement***

While specific trade-related obligations modelled after the Montreal Protocol might be difficult to include in a post-2012 climate agreement, it is conceivable that the climate regime develops other ways to deal with trade-related issues. *Jacob Werksman* takes a closer look at what a post-2012 climate agreement might actually say about trade.

He notes that reaching consensus on any multilateral agreement regarding trade-related environmental measures is difficult, mainly because they are seen by many as protectionist. However, border adjustment measures are increasingly considered a “price of passage” for any ambitious climate legislation, particularly in the United States. By requiring importers of energy-intensive goods to pay an additional tax or to purchase emissions allowances at the border, such measures are meant to address competitiveness concerns raised by domestic industries towards products imported from countries that have not taken “comparable” action to reduce emissions. This raises the question of what can be considered “comparable” and how the concept of “common but differentiated responsibilities” can be reflected. A post-2012 climate agreement could play a significant role in clarifying this issue. Another trade-related aspect within the climate regime is the creation of carbon markets (i.e. setting a price for carbon through domestic or international emissions trading schemes), which would greatly influence international trade flows and could therefore lead to trade-related tensions. Countries might also put in place restrictions on “imports” of offsets and allowances from other trading schemes. Therefore, a multilateral agreement on harmonizing carbon markets and some disciplines concerning fairness and mutual recognition is desirable. The climate regime would be the best suited to develop such rules.

### ***3.4. Multilateral efforts to increase technology transfer***

Increasing technology transfer to developing countries will be a critical component of any post-2012 climate regime. It is indispensable not only because it is the only way ambitious emission targets can be met in the long run, but also because it provides an incentive for emerging economies and other developing countries to enhance their mitigation efforts.



The links to trade policy are obvious, as the development, deployment and diffusion of technologies on a global scale inherently involve trade and investment decisions. *Muthukumara Mani* explores potential incentive mechanisms for the transfer of climate-friendly technologies on the multilateral level. While the removal of trade barriers on such technologies could significantly contribute to faster diffusion, he argues that it would have to be part of an agreement that is acceptable to all countries and takes into account the economic development objectives of developing countries. Mani's analysis also shows how trade liberalization has to be understood as a first step in a broader multilateral approach to enhance technology transfer. Further measures are needed within and outside of the trade regime on topics such as intellectual property rights; the reform or removal of fossil fuel subsidies and other perverse incentives; a framework for clean investments, including through specific mechanisms in bilateral and regional trade and investment agreements; enhanced financial transfers; and internationally coordinated research and development. Thus, his analysis reminds us that while the trade regime can make significant contributions to the fight against climate change, these represent neither a panacea nor something that should be undertaken in isolation of other efforts to increase technology transfer.

### **3.5. Contributions of the trade regime to climate-friendly and resilient agriculture**

When considering trade and climate linkages, the focus is mainly on issues related to energy, transport and technology. In contrast, agriculture is an area that is often overlooked even though it is of central importance both to reducing emissions and to adapting to the impacts of climate change. Agriculture is responsible for 13.5 per cent of global GHG emissions and directly provides the livelihood

for millions of people, especially in some of the regions most vulnerable to climate change. *Moustapha Kamal Gueye, Jonathan Hepburn, Mahesh Sugathan* and *Marie Chamay* explore possibilities for synergies between the trade negotiations and mitigation and adaptation in agriculture. In the agricultural sector, adaptation to climate change means enhancing resilience by, for instance, protecting small farmers and their methods of production. The trade regime could help protect these producers by ensuring there is room for defensive trade tools (e.g. more flexible treatment of "special products"). The trade regime could also provide incentives for organic agriculture, which is less carbon-intensive and therefore contributes to climate change mitigation, by reforming agricultural subsidies. Finally, market access could be enhanced for agricultural products providing climate benefits, such as organic products or sustainably-produced biofuels. The climate impacts of agricultural trade policies still play a marginal role in the trade discussions and certainly deserve more attention both from researchers and trade negotiators in the years to come.

### **3.6. Squaring the circle—docking point between regimes**

As the different contributions in this publication show, there is considerable potential for action in both the climate and trade regimes. The main challenge, however, is to build consensus. Strategic issue-linking within the WTO as well as between the WTO and the United Nations climate regime could be a way to achieve this. *Fariborz Zelli* analyses options for negotiators to align their strategies on related issues. By enlarging the scope of discussion, issue-linking increases the probability of a balanced outcome that reflects the interests of all countries and creates an atmosphere more conducive to cooperation. However, it also has some drawbacks, especially the danger of overloading and over-complicating

negotiations. If issues are to be linked, the question of the most appropriate forum is critical, especially as the WTO is regarded by some as ill-suited to address environmental issues. However, as Zelli shows, there are interesting avenues for issue-linking within the trade regime that could be explored for the benefit of the world's climate, such as

the debate on WTO exceptions for specific trade obligations in multilateral environmental agreements and the discussion on relaxing intellectual property rules for technology transfer.

#### 4. Regional and bilateral measures—can less be more?

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The development of trade policy also takes place outside the WTO context. In fact, as the WTO negotiations continue to falter, policymakers have increasingly turned towards bilateral and regional alternatives. The number of regional and bilateral trade agreements has increased steeply over the last years. Over 400 such agreements had been notified to the WTO as of the end of 2008, and almost all WTO members are parties to one or several of them.

Therefore, while a large part of the academic and political debate still concentrates on the multilateral trade regime, it is indispensable to consider how regional and bilateral trade agreements can contribute to addressing climate change. Moreover, regional or bilateral approaches can offer possibilities to experiment with new mechanisms and to move further beyond what is possible at the multilateral level. *Joy A. Kim* analyses how regional trade agreements have accommodated environmental concerns particularly through environmental clauses and cooperation mechanisms. Building on this analysis, she explores how such agreements can be brought to bear on the climate challenge. She identifies a number of potential contributions, including the targeted removal of trade barriers for climate-friendly technologies. Regional and bilateral trade agreements might also include provisions to harmonize environmental standards or to specifically facilitate low-

carbon investments. Furthermore, agreements could include cooperation mechanisms to promote technology transfer, technical assistance and capacity building. According to *Kim*, these cooperation mechanisms hold the most significant potential for climate mitigation and adaptation, as they can be designed specifically to address the concern of climate change if there is mutual desire among the parties concerned.

*Thomas Brewer* also analyses the potential for action on the regional and bilateral level. He focuses on sectoral approaches and places special emphasis on the transfer of low-carbon technologies. Technology transfer is a complex process and possible impediments are diverse, including insufficient financial transfers, insufficient global research, barriers to trade and investment, and problems linked to intellectual property rights and anti-competitive behaviour by firms. Therefore, there is a need for an integrated approach across different policy fields, including trade. As an example of a regional sectoral agreement, *Brewer* takes a closer look at the Asia-Pacific Partnership on Clean Development and Climate. This initiative combines publicly funded research and technology transfer in seven countries with an assessment and lowering of barriers to trade and investment in climate-friendly technologies. One important caveat of such initiatives is also highlighted; instead of creating global public goods, initiatives with a limited number



of participants risk creating “club goods” whose benefit is restricted to the members of the club. As an example of a sector governed by a number of bilateral agreements, Brewer analyses the aviation industry. The institutional setting in this case has only allowed for slow progress with respect to climate change and fears of regulatory capture by the industry have

been raised. If aviation is to be included in a post-2012 climate regime, Brewer argues that it will be done despite, rather than because of, existing bilateral sectoral agreements. In the case of aviation, it might well be that the prospect of unilateral action by the European Union will prove decisive in moving the issue forward.

## 5. Unilateral measures—exploring carrots and sticks

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Unilateral measures are probably the most controversial topic in the debate on trade and climate change. However, unilateral policies to reduce GHG emissions are commonplace. In fact, most policies to reduce emissions are adopted at the domestic level, as the climate regime does not prescribe specific policies, but leaves it up to Parties to decide how they will achieve their commitments. Trade comes into play when different policies in different countries influence competitiveness and risk shifting production to countries with less stringent climate policies. In addition to these *economic* concerns about competitiveness and job losses, there is also an *environmental* concern, referred to as “carbon leakage”, that this shifting of production will frustrate efforts to achieve aggregate GHG emissions reductions.

To deal with competitiveness and leakage concerns, border adjustment measures have been proposed both in the United States and in Europe. These would require importers of energy-intensive goods from countries without comparable carbon constraints to pay an additional tax or to purchase emissions allowances at the border. Obviously, such measures would have an impact on international trade. Furthermore, it remains unclear how effective such measures would be in reducing competitiveness distortions, leakage and, finally, global emissions. *Julia Reinaud* takes a closer look at this question.

She highlights that competitiveness and leakage concerns are only justified for a limited number of manufacturing sectors or sub-sectors that bear significant incremental costs without being able to fully pass on these costs to consumers. In other words, such sectors are not only emission- or energy-intensive, but also heavily exposed to international competition (i.e. trade-intensive). She stresses that whether or not a border adjustment scheme will be effective depends on the details of its implementation. There is a trade-off: the more effective a border adjustment scheme will be in fully addressing carbon leakage in theory, the heavier the administrative burden will be in practice. Given the many difficult questions such measures would have to tackle, including country- and sector-coverage, as well as the accurate calculation of embedded emissions, Reinaud finds that the effectiveness of the schemes as they are currently discussed in the European Union and the United States is questionable.

An argument put forward in favour of border adjustment measures is that they could encourage participation in an international agreement. For a number of reasons, such an agreement is seen as the first best solution to the carbon leakage issue—it would be easier to administer, less trade-restrictive and leave fewer possibilities for arbitrary behaviour. However, there is a risk of free-riding. Therefore, some argue, the threat of unilateral border

adjustment measures might be needed to get all countries to participate. This argument is put forward in particular regarding large emerging countries who many hope will take some form of commitment in a post-2012 climate regime.

*ZhongXiang Zhang* critically assesses the claim that border adjustment measures could work as a “stick” to ensure developing country commitments in a post-2012 climate regime. He suggests that in order to encourage more action on the part of developing countries, developed countries first need to understand why developing countries are unwilling and unable to move beyond a commitment on certain policies and measures. They legitimately expect developed countries to take the lead in reducing reductions and to provide financial assistance as well as low-carbon technologies to support climate action in developing countries. He argues that such positive incentives, or “carrots”, are likely to be more effective than “sticks”. Although not completely excluding the use of “sticks”, he stresses they should merely be considered as a complementary measure and be applied with caution, taking into consideration differences in national circumstances and according to multilaterally defined standards. The border adjustment measures currently discussed in some industrialized countries are likely to face

a WTO-consistency challenge, are perceived as counter-productive and risk frustrating multilateral efforts to agree on a meaningful post-2012 climate regime.

Additionally, border adjustment measures raise questions as to their compatibility with WTO law. *Jochem Wiers* provides a legal analysis building on previous “trade and environment” cases brought before the WTO. He examines whether and under which conditions such measures would likely be considered consistent with the obligations of international trade law. He finds that the application of border adjustment measures to countries that do not apply comparable climate policies would probably violate the WTO principle of most-favoured-nation treatment. Such a measure would therefore have to be justified under the environmental exceptions contained in Article XX of the General Agreement on Tariffs and Trade (GATT). Wiers shows how the findings of the WTO’s Appellate Body in a number of cases indicate that such measures might indeed be found acceptable. However, he also highlights a number of difficult questions that would have to be addressed. Hence, while WTO law probably does not prohibit *per se* the introduction of such measures, much depends on their specific design and application.

## 6. Concluding thoughts

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The analyses assembled in this publication provide an overview of the current state of the debate on the trade-climate relationship. They highlight a number of important points. First, climate change presents a major challenge for the future of mankind and all areas of public policy are required to contribute to tackling this challenge. While trade policies are no panacea to solve the climate crisis, trade can make an important contribution. Second, climate policymakers can do more

to clarify the trade-climate relationship by, for instance, providing more clarity on the issue of trade-related measures or by identifying low-carbon technologies. Third, opportunities for action exist at the multilateral, regional and national levels and should not be seen as mutually exclusive. Fourth, the debate on trade and climate change focuses primarily on the questions of technology transfer and possible implications of unilateral trade-related measures. However, this should not lead us

to neglect other possible linkages. As the contribution on agriculture shows, the impacts of and on climate change need to be considered in all fields of trade negotiations. Finally, more analysis is needed for a better understanding of many of the issues considered in this publication. This, however, is not a reason to postpone action. Rather, research and debate on trade-climate linkages should continue and inform policy choices on an ongoing basis. Robust action is urgently needed to prevent the worst impacts of climate change. The time to act is now.

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## Endnotes

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# PART I: Multilateral Measures - The Challenge of Consensus

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## Understanding the Interplay between the Climate and Trade Regimes

*Robyn Eckersley*

### 1. Introduction

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Most of the scholarship by international lawyers and international relations theorists on the interplay between international regimes has focused on the conflict and synergy between overlapping principles and rules. I offer a broader framework for understanding regime interplay that builds on this work but also directs attention to the interplay between contested transnational policy discourses

that surround, shape and constrain how actors interpret and seek to reconcile actual conflict, or prevent potential conflict, between regimes. This broader framework will be used to assess the claims of some environmental non-governmental organizations (NGOs) and others that the World Trade Organization (WTO) is undermining the climate regime.

### 2. Understanding regime interplay

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An international regime may be understood as constituted by:

1. the detailed prescriptive rules (including policy instruments) which constitute the operative or binding provisions of a regime;
2. the general objectives and principles that guide the formulation and implementation of the rules; and
3. the broader discourses that articulate the collective meaning and significance of the principles and rules.

While prescriptive rules are more or less unique to particular regimes, general principles (such as the polluter pays principle or the precautionary principle) and broader discourses (such as the “Washington consensus”) are more ubiquitous

and can form part of transnational discourses promoted by actors and organizations working across a range of policy networks and rule-making bodies.<sup>1</sup> Policy discourses of economic and environmental integration, such as “sustainable development”, represent specialized, transnational discourses that have become increasingly influential in shaping the way different economic and environmental regimes are interpreted and managed. The advantages of focusing on transnational policy discourses in the interplay between regimes is that it becomes possible to look for linkages or patterns in the discourses that are employed to construct and defend the principles and rules of different regimes. Discourses also shed light on the priority and weight given to particular principles and norms in legal texts. In effect, they determine which features of the regime are

salient or operative and which are less important. Below, I map the evolving relationship between the principles and rules of the trade and climate regimes and then show how “synergy” between the two regimes has been constructed through a particular discourse of trade-environment integration. My quasi-explanatory task is to discover whether and to what extent the climate regime has been undermined by the trading

regime, as claimed by environmental NGOs. My critical and normative task is to expose what is concealed or sidelined by the dominant integration discourse and to suggest “what could have been otherwise” by highlighting some of the integration opportunities that were available but not taken by the Parties, and which might have promoted a stronger harmony between the regimes.

### 3. The World Trade Organization and the climate regime

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Compared to the relationship between the WTO and the Cartagena Protocol on Biosafety, the relationship between the WTO and the Kyoto Protocol (and the broader climate regime) appears to be relatively harmonious and there has so far been no direct collision at the level of rules, and no instances of “forum shopping” by Parties with axes to grind. Yet this is not necessarily an indication that

the two regimes are perfectly harmonized. In the following summary, I show that the potential conflict has been managed through a particular transnational discourse of economy-environment integration that constructs an open and expanding international economy as compatible with the goal of curbing global aggregate emissions of greenhouse gases.

### 4. The interplay of principles

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A comparison of the principles of the two regimes reveals four significant points of overlap:

1. the endorsement of sustainable development—mentioned in the preamble of the Marrakech Agreement Establishing the WTO as well as in several articles of the United Nations Framework Convention on Climate Change (UNFCCC);<sup>2</sup>
2. special consideration of the circumstance of developing countries, although expressed in different language for different purposes—while the WTO regime includes provisions for “special and differential treatment”, the climate regime has endorsed the principle of “common but differentiated responsibilities”;
3. support for an open economic system including avoidance of any arbitrary or

unjustifiable discrimination or disguised restrictions of trade—a principle inherent in the provisions of the trade regime, and explicitly mentioned in Article 3.5 of the UNFCCC; and

4. the maintenance of economic growth—this is mentioned throughout the UNFCCC and basic to, though implicit, in the liberalization agenda of the WTO.<sup>3</sup>

As we shall see, these are the principles that have received the most emphasis in the dominant “integration” discourse discussed below. However, there are also significant tensions among some of the non-overlapping principles. In particular, the UNFCCC principle of “common but differentiated responsibilities”, which implies that developed countries take

the lead in combating climate change on the basis of their greater historical responsibilities and capacity, sits uncomfortably with the trade regime's principles of non-discrimination and reciprocity which—if applied to the climate regime—would require tit for tat reductions in emissions without any positive discrimination or affirmative action in favour of developing countries to account for their development needs.<sup>4</sup> Of course, the trade regime does make provision for the “special and differential treatment”

of developing countries. However, the difference between “differential treatment” in the trade regime and “differentiated responsibilities” in the climate regime is key.

While both regimes acknowledge differences in capacity and development needs, there is no sense in the trade regime that developed

countries have a moral responsibility to pay a disproportionate share of the costs of collective action or “take the lead” on account of past actions; in this sense the climate regime provides a stronger challenge than the trade regime to the traditional principles of liberal

contractualism, grounded in reciprocity, that formally underpin international treaty-making. This has significant implications for the emerging debate about the appropriateness of border adjustment measures (BAMs) to address the problem of

carbon leakage, particularly if they were applied only to industrialized countries in deference to “common but differentiated responsibilities”. Likewise, the climate regime's precautionary approach to risk could potentially justify a wide range of environmental regulations that might not be in conformity with the strictures of the WTO's rules on environmental exemptions.

***“Despite the absence of any direct conflict between the rules of the WTO and the Kyoto Protocol, there is nonetheless still considerable potential for conflict, depending on how Parties choose to implement their obligations”***

## 5. The interplay of rules

The Kyoto Protocol remains faithful to the UNFCCC principle of avoiding arbitrary or unjustifiable discrimination or disguised restrictions on international trade by avoiding any explicit authorization of restrictive trade measures. This is despite the success of such measures in earlier multilateral environmental agreements, particularly in the fields of hazardous waste regulation, wildlife trade, and ozone protection. Indeed, Article 2.3 of the Kyoto Protocol takes this further in stipulating that the developed countries shall “strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including... effects on international trade”.<sup>5</sup>

Despite the absence of any direct conflict between the rules of the WTO and the Kyoto

Protocol, there is nonetheless still considerable potential for conflict, depending on how Parties choose to implement their obligations. Thomas Brewer has identified 250 points of potential intersection between the five key operative provisions of the Protocol—international emissions trading, Clean Development Mechanism, and Joint Implementation, as well as compliance and domestic policy measures—and the 50 or so WTO agreements.<sup>6</sup> However, the most significant area of potential intersection is the unilateral use of BAMs for imports or exports to address the problems of competitive disadvantage and possible “carbon leakage” arising from new national climate policies such as cap-and-trade schemes and/or carbon taxes.<sup>7</sup> While the balance of legal opinion tends to suggest that appropriately



designed and non-discriminatory unilateral BAMs are likely to be WTO-compatible, there is sufficient uncertainty to create the possibility of a legal challenge under the WTO's dispute settlement procedures.<sup>8</sup>

The problem with the BAM option is that the schemes that are most consistent with the objectives and principles of the climate regime (in respecting "common but differentiated responsibilities") are likely to be least consistent with the WTO rules. So, for example, an EU BAM scheme that would be directed only

against US imports, as suggested by Joseph Stiglitz, or only against imports from developed countries with weak climate policies, would be likely to provoke a legal challenge in the WTO on the grounds that it is discriminatory, unless it can be justified as an environmental exemption under Article XX of the General Agreement on Tariffs and Trade (GATT).<sup>9</sup> However, non-discriminatory BAMs would offend the principle of Northern leadership and "common but differentiated responsibilities" in the climate regime and can be expected to be strongly resisted by developing countries.

## 6. The interplay of discourses

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Discourses operate at different levels of generality and specificity, from the local to the global, and from the highly technical to the everyday. Economic and environmental policy discourses represent specialized, transnational discourses that have become increasingly influential in shaping the way different regimes are interpreted and managed. Transnational discourses that have become hegemonic provide a means of stabilizing the meaning of the ideas, norms and procedures of regimes, and of framing and managing the relationship between overlapping regimes that might otherwise be in conflict. Below, I present two conflicting discourses on the relationship between the trade regime and climate protection.

### **6.1. Trade and climate protection synergy according to the WTO**

The speech delivered by Pascal Lamy, Director-General of the WTO, at the Informal Trade Ministers' Dialogue on Climate Change held at the Bali climate change negotiations on 8-9 December 2007 provides an illustration of the WTO framing of the trade-climate protection relationship, which is compatible with the

dominant neoliberal economic consensus that also informs the framing of the climate change regime.<sup>10</sup>

Lamy's framing of the trade-environment relationship may be encapsulated in the argument that "trade liberalization generates wealth and innovation for climate protection". This framing rests on the following interlocking propositions:

- the law of comparative advantage enables the most efficient allocation of resources;
- trade builds environmental capacity;
- trade enables diffusion of environmental goods and services (EGS); and
- the WTO rules provide adequate environmental exemptions while guarding against protectionism.

This framing was also shared by the EU Trade Commissioner at that time, Peter Mandelson.<sup>11</sup> As I argue below, the Parties to the climate regime have also built the climate regime in the context of an open trading system and this has formed part of the "background consensus". As far as I am aware, no Party to the climate regime has

taken issue with Lamy's speech at Bali, and given the significant overlap in membership between the climate regime and the trade regime, the Kyoto Parties may also be taken as tacitly supporting the WTO discourse on the synergies between an open trading regime and climate protection.

Lamy has also warned against the unilateral use of BAMs and argued that the problem of climate change is best dealt with in a global climate change accord, not the global trade forum which is already overburdened.<sup>12</sup> Others have pointed out that stronger environmental exemptions in the WTO would disadvantage developing countries.<sup>13</sup>

## **6.2. Counter-discourses on trade and climate protection**

The general claim that "trade liberalization generates wealth and innovation for climate protection" has been challenged by a range of environmental NGOs, green think tanks/research institutes, and academics working in the cognate fields of ecological economics and global political ecology.<sup>14</sup> There is, of course, no single, unified NGO or academic view on the relationship between trade and climate protection. However, it is possible to draw together a generic counter-discourse, built on the elements and fragments of a variety of recurring counter-discourses about trade and environment in general, and trade and climate protection in particular, which provides a general counterpoint to the "win-win" discourse which selectively highlights the virtues of trade liberalization in EGS. These counter-arguments mostly acknowledge the benefits of removing distorting subsidies and liberalizing trade in EGS, but these areas of mutual synergy are considered minor when set against the more general consequences of trade liberalization that is not effectively disciplined by climate concerns. The core elements of this general counter-discourse are:

- the growing scale of trade following liberalization leads to rising aggregate greenhouse gas emissions and merely focusing on the additional transport costs of expanding trade misses this larger growth; reductions in the emissions intensity of production merely reduce the rate of the aggregate increase;
- trade leads to an "ecologically unequal exchange" (the North imports more materials, energy and biocapacity that it exports) and therefore undermines environmental capacity in the South;
- the WTO's rules permit countries to use the environment as a "free resource"; the failure of the WTO to apply the polluter pays principle allows unfair subsidization; and
- the WTO's environmental exemptions are inadequate, and WTO rules undermine the climate regime by restricting the range of effective policy measures that can be used.

These contending discourses select and emphasize different elements of the standard economic framework for assessing the environmental effects of trade, which focuses on scale, composition, and technology effects and the environmental regulatory context, both internationally and domestically. In particular, the WTO discourse emphasizes the virtues of new technologies and the significance of the international environmental regulatory context, whereas the counter-discourses emphasize the problem of scale and composition (particularly, the relocation of emissions-intensive industry to developing countries).



## 7. From sustainable development to neoliberal environmentalism

While the more general case for trade liberalization enjoys strong support within the discipline of neoclassical economics and among state elites, it has not always been thus. Despite the continuity in the principles of the GATT and the WTO, the international consensus about their meaning and application has evolved significantly since the 1940s. In broad outline, we have seen a shift from what John Ruggie has called the “embedded liberalism” of the immediate post-war period to the “Washington consensus” or “neoliberalism” of the 1980s, which has more or less prevailed through to the present, despite the debate about an emerging “post-Washington” consensus.<sup>15</sup> Most noteworthy for the discursive explanation is that the rise of the new orthodoxy of neoliberalism in the 1980s coincided with the rise to prominence of the new global discourse of sustainable development.

In 1987, the Brundtland Report questioned the “limits-to-growth” discourse of the early 1970s by fundamentally challenging the idea that environmental protection and economic development stand in a simple zero-sum relationship.<sup>16</sup> It became accepted that there is room for the development of virtuous synergies between economic growth (nationally and globally, via expanding world trade) and environmental protection. Of course, exactly how much room remains a matter of real contention, which has given rise to a spectrum of discourses of sustainable development and ecological modernization, ranging from “weak” (and merely technical) to “strong” (and comprehensive and reflexive) in terms of their likely efficacy in promoting lasting ecological sustainability.<sup>17</sup> The discourse of sustainable development according to the

Brundtland Report sits mid-way along this spectrum. The Report argues that economic growth and environmental degradation can be “decoupled” through the pursuit of growth that uses less energy and natural resources, and produces less waste. It redefined limits in more flexible terms to encompass only the restrictions arising from “the state of technology and social organization on the environment’s ability to meet present and future needs”.<sup>18</sup>

*“The concern by environmentalists that the WTO is undermining the climate regime is misguided”*

the skewed distribution of global wealth and income and ensure the satisfaction of human needs, now and in the future. The Brundtland Report had offered a new synthesis of environment and development considerations that reflected a Keynesian-like compromise of “managed sustainable growth”.<sup>19</sup>

However, by 1992, the Brundtland Report’s discourse of sustainable development had been reinterpreted in more market-friendly terms to embrace the liberalization of trade and finance and the promotion of market policy tools over so-called “command-and-control” regulation. This provided the overarching “norm-complex” that was legitimated at the 1992 Earth Summit, encapsulated in the Rio Declaration, Agenda 21, the Convention on Biological Diversity and the UNFCCC. According to Bernstein, this more market-friendly discourse of liberal environmentalism only became institutionalized after the consolidation of neoliberalism and was therefore adapted to fit the new neoliberal frame.<sup>20</sup> This explanation helps to shed light on the selective appropriation of the principles of the Rio Declaration by the Parties to the UNFCCC, including their conspicuous

Although the Brundtland Report stressed the win-win linkages between economic growth and environmental protection, it also sought to arrest

“deselection” of the polluter pays principle. Yet the polluter pays principle could have served as a useful integrating principle or lynchpin between the climate and trade regimes. It is conceptually consistent with the WTO’s objective of removing unjustifiable subsidies in production, and could have provided a clear justification for BAMs. The polluter pays principle is also central to ensuring that energy prices reflect their full environmental and climate costs, consistent with the objectives of the climate regime.

The Marrakech Agreement Establishing the World Trade Organization was concluded two years after the Earth Summit, but apart from a general endorsement of sustainable development in the preamble, there has been no fundamental changes to the basic principles of the GATT to bring them into

alignment with the Rio Declaration’s principles of sustainable development. For instance, neither the precautionary principle nor the principle of “common but differentiated responsibilities” were mentioned in the WTO Agreements. However, the pivotal moment that set the shape of the relationship between the climate and trade regimes occurred not in 1994, when the Marrakech Agreement was signed, but rather in 1992 when the UNFCCC was concluded and signed. Rather than push for the recalibration of the international trade rules to conform with the requirements of climate protection, or push for the use of trade measures to enforce compliance and ensure fairness to “first movers” in the climate regime, the Parties to the climate regime have ensured that liberalized trade and an expanding global economy have been protected against trade-restrictive climate policies.

## 8. Conclusion

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The foregoing analysis suggests that the concern by environmentalists that the WTO is undermining the climate regime is misguided. While many environmentalists might regard Pascal Lamy’s speech at Bali as evidence of lack of resolve on the part of the trade community to tackle climate change, such a charge fails to acknowledge the willing adoption of the trade liberalization agenda by the climate community. This posture was legitimated at Rio by a transnational discourse of neoliberal environmentalism (or weak ecological modernization) that transcended the WTO and the Kyoto Protocol and now frames the pattern of accommodation between the regimes in ways that have prevented the outbreak of any direct collision of rules (or any conflicts involving the implementation of the rules). This discourse had become established prior to the conclusion of the Uruguay Round and the establishment of the WTO and it provides a minimalist or default

approach to trade-environment integration in the absence of international consensus about whether and how the objectives of the trade and climate regimes can be made more mutually supportive.

While conflict between the two regimes has so far been avoided, the persistence of the free rider and carbon leakage problems suggest that the relatively harmonious history between the two regimes may not endure. There are signs that the general taboo against unilateral border taxes or countervailing duties may be challenged in the light of the growing push within the European Union, the United States and elsewhere for carbon equalization measures of some kind.

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## Endnotes

<sup>1</sup> Discourses in this context refer to the ensemble of assumptions, beliefs, goals, and forms of knowledge enlisted by actors to interpret and order the realm of action covered by the regime, including the recognized actors, the appropriate realm of action, the principles, rules, decision-making practices and management techniques that shape and control behaviour.

<sup>2</sup> The first paragraph of the preamble of the Agreement Establishing the World Trade Organization states that Member States recognize that “their relations in the field of trade and economic endeavour should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while allowing for the optimal use of the world’s resources in accordance with the objective of sustainable development, seeking both 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 economic development”. Article 2 of the UNFCCC states the overall objective of the convention, including “to enable economic development to proceed in a sustainable manner”. Article 3.4 provides that “[t]he Parties have a right to, and should, promote sustainable development”, while Article 3.5 calls upon Parties to “cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties”.

<sup>3</sup> The preamble of the UNFCCC acknowledges the “the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty”. Article 3.5 calls for “sustainable economic growth and development in all parties”, while Article 4.2 mentions “the need to maintain strong and sustainable economic growth”.

<sup>4</sup> Article 3.1 of the UNFCCC provides that: “The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and capabilities. Accordingly, the developed country parties should take the lead in combating climate change and the adverse effects thereof.” Although Article 3.1 does not spell out the precise details of these “differentiated” responsibilities, the Convention, read as a whole, makes it clear that the obligation of developed countries to lead arises from their greater contribution to past emissions and their greater capacity to absorb emissions cuts relative to developing countries. This is spelled out in the preamble of the Convention, which declares “that the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs”.

<sup>5</sup> Likewise, the rules on compliance that were subsequently negotiated under the Marrakech Accords do not authorize the use of trade sanctions. See Marrakech Accords, Decision 24/CP.7, Sec. XV. For a discussion, see Stokke, O. S. (2004). Trade Measures and Climate Compliance: Institutional Interplay Between the WTO and the Marrakech Accords, *International Environmental Agreements: Politics, Law and Economics* 4, 339-357.

<sup>6</sup> Brewer, T. (2004). The WTO and the Kyoto Protocol: Interaction Issues, *Climate Policy* 4, 3-12, p. 4.

<sup>7</sup> Such border carbon adjustment measures could take the form either of a border tax adjustment or of an obligation for importers to render allowances in an emissions trading scheme. See articles by Renaud and Wiers in this volume.

<sup>8</sup> See Hoerner, A. and Muller, F. (1996). *Carbon Taxes for Climate Protection in a Competitive World*. Center for Global Change, University of Maryland, College Park, MD; Zhang, Z. X. (1998). Greenhouse Gas Emissions Trading and the World Trade System, *Journal of World Trade* 32(5), 219-239; Brack, D., Grubb, M. and Windram, C. (2000). *International Trade and Climate Policies*. Royal Institute of International Affairs and Earthscan, London; Brewer, T. (2004), supra note 6; Goh, G. (2004). The World Trade Organisation, Kyoto and Energy Tax Adjustments at the Border, *Journal of World Trade* 38(3), 395-423; and Biermann, F. and Brohm, R. (2005). Implementing the Kyoto Protocol without the United States: The Strategic Role of Energy Tax Adjustments at the Border, *Climate Policy* 4, 289-302.

<sup>9</sup> See Center for Global Development (2006). Stiglitz Urges Tariffs on U.S. Exports to Cut Global Warming, posted 29 September 2006. Available at [http://blogs.cgdev.org/globaldevelopment/2006/09/stiglitz\\_urges\\_tariffs\\_on\\_us\\_e.php](http://blogs.cgdev.org/globaldevelopment/2006/09/stiglitz_urges_tariffs_on_us_e.php). For a more detailed discussion, see Stokke, supra note 5 and Biermann and Brohm, supra note 8. Biermann and Brohm argue that border tax adjustments should be avoided against developing countries, in line with the principle of “common but differentiated responsibilities”. They suggest that the problem of carbon leakage to developing countries should be addressed through other means, such as financial and technological assistance.

<sup>10</sup> Lamy, P. (2007). “Doha Could Deliver Double Win-win for Environment and Trade”, Speech delivered to the Informal Trade Ministers’ Dialogue on Climate Change in Bali, 8-9 December 2007. Available at [http://www.wto.org/english/news\\_e/sppl\\_e/sppl83\\_e.htm](http://www.wto.org/english/news_e/sppl_e/sppl83_e.htm).

<sup>11</sup> Mandelson, P. (2006). How Trade Can Be Part of the Climate Change Solution. European Commission. Available at: [http://ec.europa.eu/commission\\_barroso/mandelson/speeches\\_articles/sppm136\\_com\\_en.htm](http://ec.europa.eu/commission_barroso/mandelson/speeches_articles/sppm136_com_en.htm).

<sup>12</sup> See Lamy, P., supra note 10; Lamy, P. (2007). “The ‘Greening’ of the WTO has Started”. Speech delivered at Yale University, 24 October 2007. Available at [http://www.wto.org/english/news\\_e/sppl\\_e/sppl79\\_e.htm](http://www.wto.org/english/news_e/sppl_e/sppl79_e.htm); and Lamy, P. (2008). “A Consensus International Accord on Climate Change is Needed”. Speech delivered to a European Parliament panel in Brussels, 29 May 2008. Available at [http://www.wto.org/english/news\\_e/sppl\\_e/sppl91\\_e.htm](http://www.wto.org/english/news_e/sppl_e/sppl91_e.htm).

<sup>13</sup> Bhagwati, J. (2000). On Thinking Clearly about the Linkages between Trade and Environment, *Environment and Development Economics* 5(4), 485-96. It has also been pointed out that trade measures are asymmetrical because their success depends on the size of a country’s domestic market and therefore only economically powerful countries are able to utilize such measures effectively. See Bhagwati, J. (2002). Afterword: The Question of Linkage, *American Journal of International Law* 96, 126-134; and Stokke, supra note 5.

<sup>14</sup> For example, Friends of the Earth, the Wuppertal Institute, and global political ecologists such as Wolfgang Sachs, Timmons Robert and Bradley Parks and ecological economists such as Jan Ott Andersson and Mattias Lindroth. See Bringezu, S. and Schütz, H. (2001). *Material Use Indicators for the European Union, 1980-1997. Economy Wide Material Flow Accounts and Balanced and Derived Indicators of Resource Use*. (EUROSTAT Working Paper No. 2/2002/B/2). European Communities; Sachs, W., Loske, R., Linz, M. et al. (1998). *Greening the North: A Post-Industrial Blueprint for Ecology and Equity*. Zed Books, London; Roberts, T. and Parks, B. (2007). *A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy*. The MIT Press, Cambridge, MA; Andersson, J. O. and Lindroth, M. (2001). Ecologically Unsustainable Trade, *Ecological Economics* 37, 113-122.

<sup>15</sup> See Ruggie, J. G. (1998). *Constructing the World Polity: Essays on International Political Theory*. Routledge, London; and Maxwell, S. (2005). *The Washington Consensus is Dead! Long Live the Meta-Narrative!* Overseas Development Institute, London. It should be noted that the post-Washington consensus discourse continues to stress open economies, and trade as an engine of growth and poverty reduction.

<sup>16</sup> World Commission on Environment and Development (WCED) (1987). *Our Common Future*. Oxford University Press, Oxford.

<sup>17</sup> Christoff, P. (1996). Ecological Modernisation, Ecological Modernities, *Environmental Politics* 5(3), 476-500.

<sup>18</sup> WCED, supra note 16 at p. 87.

<sup>19</sup> Bernstein, S. (2001). *The Compromise of Liberal Environmentalism*. Columbia University Press, New York, p. 7.

<sup>20</sup> *Ibid.*

# Achieving Consensus: Multilateral Trade Measures in Post-2012 Scenarios

Aaron Cosby

## 1. Introduction

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Are there World Trade Organization (WTO) agreements that might further the objectives of the climate regime? Is there potential within a post-2012 climate regime for agreement

on trade measures that would help advance those same objectives? This article will address these two questions.

## 2. Multilateral trade measures in the trade regime

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This article assumes, as a starting point, that the multilateral trade regime has the capacity to create the necessary incentives and an enabling environment to address climate change challenges. But to go beyond this generality to pragmatic discourse we need to define the scope of the discussion, which here focuses on the potential and pitfalls of so-called “multilateral trade measures”. Trade measures are usually taken at the national level, and so the term “multilateral trade measures” might be confusing for some. This article will discuss two classes of policies: trade measures taken at the national level for which we have agreed multilateral rules on usage; and agreement at the multilateral level on trade rules within the WTO body of law.

*“There are considerable challenges involved with having a trade body, which has never before set a standard, try to set one for environmental goods”*

barriers to environmental goods and services.”<sup>1</sup> Of course there is no perfect match between environmental goods, however defined, and goods that help achieve climate change objectives, but there will nonetheless necessarily be some overlap.<sup>2</sup>

The negotiations on this item in the Doha Work Programme have been frustrated by a lack of consensus on how to

define environmental goods. In effect—at least with respect to those goods that are environmentally preferable to other goods in their class (e.g. fuel efficient cars)—what the WTO is trying to do is create an environmental standard: a definition of a good that, because of its environmental attributes, will receive special treatment. There are other ways to define environmental goods, of course, including the method by which they have been produced, or by virtue of their inclusion in agreed project types, such as Clean Development Mechanism projects. None is without their challenges. In particular, there are considerable challenges involved with having a trade body, which has never before set a standard, try to set one for environmental

### 2.1. Multilaterally agreed trade policy

To start with the latter, the most obvious type of policy in this category is liberalization of trade in environmental goods, for which there is a mandate under the Doha Work Programme: “We agree to negotiations on... the reduction or, as appropriate, elimination of tariff and non-tariff

goods. Among other things, the WTO would have to decide on procedures and criteria that would guide how to add new products to the list, and how to review the continuing merits of existing products that will inevitably be eclipsed by the advance of technology. These sorts of tasks are not impossible, and eco-labelling organizations carry them out all the time, as do the environmental conventions that maintain special lists, such as the Rotterdam Convention on Prior Informed Consent, the Stockholm Convention on Persistent Organic Pollutants and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). But the key point is that such an effort is well beyond the familiar for the WTO, which has typically set the rules by which standards must be set, and then let others set them.

And of course it would have to decide on a starting list. In no small part the current impasse, which has various countries pitching definitions that suit their national economic interests with scant reference to any sort of objective criteria, derives directly from the fact that trade negotiators should probably not be making environmental standards. As it does in the case of technical barriers to trade and sanitary and phytosanitary standards, the WTO should refer to standards created by bodies with legitimacy and expertise in the relevant area. At a minimum, it should be asking for outside assistance in elaborating principles and guidelines by which to choose the preferred items, as it asked for expert assistance in crafting rules on intellectual property rights. All of the multilateral environmental agreements (MEAs) referenced above employ scientific advisory bodies to help the Parties make informed decisions on listing and de-listing of items.<sup>3</sup>

Moreover, while it is appropriate and laudable for trade policymakers to consider how they might contribute to environment and climate objectives, and while the environmental goods

and services negotiations are an obvious answer to the problem, it is not clear exactly what impact a successful conclusion to the talks will have. The answer to this question obviously depends in the end on the scope and depth of the agreement, but if the current list of goods is anything to go by, the final climate change benefits may not be particularly significant.

For one thing, there are very few low-carbon goods being proposed. For another, most of them do not currently face particularly high tariff barriers, though some do for some countries. The top 10 importers of goods on a list of 153 environmental goods proposed by a group of primarily developed country WTO Members (the “Friends of Environmental Goods”) had average most-favoured-nation (MFN) tariffs of 4.8 per cent and bound tariffs of 7.8 per cent in 2006. Developing country members of this list had average rates of 6 per cent and 12.3 per cent respectively (with notable spikes, such as Mexico at 11.7 per cent and 35 per cent). However, if we are concerned about final impact, the proper figures to consider are trade-weighted average tariff rates. The top 10 importers had a *trade-weighted* average MFN tariff of 4.0 per cent—not a particularly high figure.<sup>4</sup>

Non-tariff barriers such as regulatory barriers, legal barriers and poor investment climates are by far the more important barriers to most.<sup>5</sup> So tariff liberalization alone in these few goods may or may not actually result in much increased trade. The results would undoubtedly be positive, but the question is whether they would also be significant.

Other initiatives, however, might hold more promise. Primary among them is work to lower or eliminate trade-distorting fossil fuel subsidies.<sup>6</sup> This would be a monumental accomplishment, given the enormous climate change impact of our current fossil fuel use, and the significant barriers that



these subsidies pose to alternative energy investments. But it is undoubtedly a long-term prospect.

As well, there may need to be new flexibilities in the Agreement on Subsidies and Countervailing Measures to support climate-friendly research and development, to carve out particular types of support such as free allocation of emission permits, and to support climate-friendly retrofits to existing installations, even if such support is specific, and injurious to foreign producers. More work is needed to understand how such flexibilities might be created in such a way as to avoid their abuse for protectionist ends.

It has also been argued that we may need reform of the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement to reduce the barriers that patents on climate-friendly technologies might create for technology transfer, particularly to developing countries. On this last item the literature does not indicate a great need to date, though much work is ongoing, and discussions in the United Nations Framework Convention on Climate Change (UNFCCC) context certainly assert a need.<sup>7</sup> There are existing flexibilities in the TRIPS Agreement that some argue are already sufficient. Others have argued that climate-friendly technologies are selling into a competitive market, where patents do not constitute the same kind of barriers they do in concentrated sectors like pharmaceuticals.<sup>8</sup> But certainly it is worth exploring further whether there is any scope for contributing to climate change objectives in this area of trade policy.

## ***2.2. Multilateral agreement on national-level trade measures***

The most obvious type of unilateral trade measure in the service of climate change is what has been called border carbon adjustment: taxes on imports that impose the equivalent of a domestically imposed carbon tax, or

requirements that importers buy allowances in a domestic cap and trade scheme. The latter type of measure features as one of the options for addressing competitiveness concerns in the key US Federal effort to date to address climate change and energy concerns: the American Clean Energy and Security Act.<sup>9</sup> The European Union, for its part, has been making noises about such instruments for almost a decade, and has kept open the option of using them as part of the third phase of the European emissions trading scheme (ETS). For the moment, though, the main tool employed is free allocation of emissions allowances to vulnerable industries. The Business Council of Australia is pushing for border measures, and they will no doubt soon be considered in other Organization for Economic Co-operation and Development (OECD) countries that contemplate stronger domestic actions, such as Canada, New Zealand and Japan.

Is there any scope for multilateral agreement within the WTO on when and how such measures could be used? The history of the trade and environment debates suggests not. Among developing countries they are widely seen as simply the latest in a long series of new protectionist barriers to developing country exports—barriers that spring up as traditional tariff barriers are successfully lowered.

Such suspicions are often misguided reflexive distaste for legitimate environmental measures, but it is hard to make that argument in this case. Border adjustment measures are almost always primarily discussed as a solution to competitiveness problems, and only secondarily as a solution to the key environmental problem: the risk that strong regulations will cause greenhouse gas (GHG) emissions to simply shift to unregulated countries—the “leakage” issue. As well, these measures are often discussed for use by some of the world’s worst climate performers, with the most significant historic and current responsibility for climate change—e.g. the

United States—and for use against some of the countries least responsible for historic total or current per capita emissions, and who are doing a great deal more at the policy level to address climate change than most OECD countries—e.g., China.<sup>10</sup> This does not help persuade developing country policymakers of the green credibility of such measures.

It would be an extremely steep uphill battle to have any sort of agreement on the use of such measures in the WTO, since consensus is necessary, and in this case it would involve agreement by those against whom such

measures would be used. Making such a prospect particularly difficult is the possibility that the WTO rules will be sufficient to protect against the use of such measures. There is no agreement in the literature on the WTO-legality of border adjustment measures, and in the end the specifics of any given scheme will be of primary importance. But there is a good chance that any measures which are administratively feasible and effective will necessarily be WTO non-compliant.<sup>11</sup> At the end of the day, however, anything is possible in a trade negotiation if one wants it badly enough to pay for it.

### 3. Multilateral trade measures in the climate change regime

Are there lessons from the Montreal Protocol on Substances that Deplete the Ozone Layer that can guide us as we consider whether to incorporate similar trade provisions in a climate change regime? That will depend in the first instance on the type of trade measures we are considering, and the objectives we have in mind. This article assumes that we are talking about trade measures built into the climate regime that can address the competitiveness problem, and address leakage.

These, certainly, were the objectives of the major trade provisions under the Montreal Protocol—provisions that banned trade in ozone depleting substances (ODS) with non-Parties to the Protocol. It would have been impossible to construct a system to reduce Parties' consumption of ODS if the system had not been closed.<sup>12</sup> That is, if Parties' reductions in ODS use had simply been wiped out by the import of additional ODS from non-Parties, the system would not have worked.

But at the outset, a word of caution is needed: the specifics matter a great deal. Just because

the Montreal Protocol successfully used trade measures to address competitiveness and leakage concerns does not necessarily mean there is potential for the UNFCCC to do the same. There are also trade measures in the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal and CITES, but few would suggest that they are relevant to the UNFCCC context since they are so different in their objectives and application. So we need to be careful not to be over-quick in transplanting the Montreal Protocol experience into the UNFCCC context.

There are in fact two key differences between the Montreal Protocol and the UNFCCC that should give us pause in thinking about UNFCCC-sanctioned trade measures to deal with competitiveness and leakage. First, it was easier under the Montreal Protocol. Second, the context is fundamentally different. Both of these arguments are elaborated below. But there are also important lessons to be taken from

***“We need to be careful not to be over-quick in transplanting the Montreal Protocol experience into the UNFCCC context”***

the Montreal Protocol experience, and this section finishes by drawing those out.

### **3.1. It was easier under the Montreal Protocol**

The Montreal Protocol focused on a good, or rather a small set of goods, that the world wanted phased out. In the first place, this meant that a much smaller economic stake was in play than under the UNFCCC, which covers pretty well every conceivable economic sector. It is true that the sectors vulnerable to competitiveness impacts under a post-2012 climate regime are a small subset of the whole economy—covering such areas as cement, aluminium, iron and steel, pulp and paper, oil refining and ceramics. Hourcade et al. estimated the share of these sectors in the national economy in the United Kingdom at just over 1 per cent.<sup>13</sup>

They are likely far more significant in developing economies that have smaller service sectors and larger industrial sectors as a percentage of total economy. But even at 1 per cent of gross domestic product, these sectors easily dwarf the size of the ODS-producing sector affected by the Montreal Protocol.

In the second place, the Montreal Protocol avoided the complex matter of calculating the embedded undesirables in traded goods. In fact, the Montreal Protocol had a mandate to cover goods that were manufactured using ODS, but which did not contain ODS in their final form.<sup>14</sup> But on the advice of the Protocol's Technology and Economic Assessment Panel, which argued that the necessary calculations would be far too methodologically complex, the Parties rejected operationalizing this provision.<sup>15</sup> It is worth noting that including such goods would have raised the economic stakes by making the Protocol cover a much larger set of goods, including many consumer electronics goods.

### **3.2. The context is fundamentally different—the analogy is wrong**

Under the Montreal Protocol, the issue was free-riding non-Parties, whose unchecked efforts would wreck the integrity of the regime. If it was not a closed system, then it would be fundamentally unworkable. The UNFCCC for the most part *has* a closed system; some 192 countries—including all major emitters—have ratified, and are bound by their commitments under the Convention. The issue is not so much about non-Parties, but rather about Parties with less stringent commitments (the United States as a non-Party to the Kyoto Protocol is of course a problem, but most analysts expect the United States to be part of any post-2012 regime).

The fundamental question with which we are now wrestling is: what is the appropriate level and form of responsibility for non-Annex I Parties? We are still far from agreement. Yet Annex I Parties are considering trade measures to force their preferred answer to the question. In the Montreal Protocol context, by contrast, there was international consensus on a (differentiated) timetable for phase-out among the Parties. There was never a question of using trade measures on other Parties to force them to take on an accelerated timetable of phase-out, which would be the proper analogy.

Wrapped up in all this is the fact that we have explicit agreement under the UNFCCC that developed countries are to take early action and to help developing countries to take action, given Annex I countries' historical responsibilities and their stronger capacity. And note that this action has not yet been taken in earnest in many, if not most, Annex I states—a fact that adds political heat to the context. Like it or not, GHG production is connected to economic development in a way that ODS production never was, and this is recognized in the Convention's Article 3.4:



“The Parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change.”

The differences between the Montreal Protocol and the climate change regime matter. In the context of the UNFCCC and Kyoto Protocol negotiations on a post-2012 climate regime, they matter enough that it is extremely unlikely that we will see any agreement in a post-2012 climate regime to use trade measures to address competitiveness or leakage issues between Parties. Non-Parties would be a rather different matter (and if Annex I Parties were to push hard enough for agreement on trade measures within the UNFCCC, we might in fact have a large crop of non-Parties to deal with).

### **3.3. Lessons from the Montreal Protocol**

But then how should the UNFCCC address the issues of leakage and competitiveness? Or should it at all? Two lessons at least stand out from the Montreal Protocol experience. First, recall that the Montreal Protocol rejected the idea of trying to calculate embodied ODS in traded goods as too methodologically complex. This was probably a wise decision. Second, recall that the Montreal Protocol created the Multilateral Fund, which was dedicated to meeting the incremental costs incurred by developing country governments and firms in complying with their phase-out obligations. This instrument, which was key to the decision of developing countries to sign on to a timetable of mandatory phase-out, is an excellent guide to action on climate change.

But note that, here again, the differences are important. The incremental costs of action on climate change are much higher than they were in the context of ozone depletion, and well beyond the reach of public coffers. Note the contrast between the UNFCCC Secretariat’s estimate of US\$ 200–210 billion by 2030<sup>16</sup>—this is the annual *incremental* amount needed to bring 2030 emissions down to 2004 levels—and the annual expenditure of the World Bank’s Clean Technology Fund, an admirable achievement, but which at best predictions would come in at some US\$ 2 billion per year over five years.<sup>17</sup>

The proper direction for public action is dedicated work to catalyze *private sector* investment in the development and dissemination of new technologies for mitigation and adaptation. A huge and mostly ignored part of this challenge will be in creating the right domestic conditions for such investment to materialize, and this involves the difficult work of regulatory reform, legal reform and fiscal reform in host states.<sup>18</sup> That is, we have massive flows of public investment going into demonstration projects, and to some extent that addresses the problem of commercialization and economies of scale. And we have a number of good agreements on publicly supported technology development through research and development. But the missing link, if we want incremental investment at levels anywhere near the levels estimated by the UNFCCC Secretariat, will be efforts to facilitate private sector investment in technologies that are already commercially viable, by reducing barriers and increasing incentives at the domestic level.

Here there is potential for a multilateral solution, perhaps led by the UNFCCC in combination with those who are expert in the field such as the World Bank’s Energy Sector Management Assistance Programme, to really make progress in addressing the underlying issues that will determine

developing country ability and willingness to take meaningful action on climate change. That is an indirect and difficult road to addressing competitiveness and leakage, but it may be the only road that leads to success.

At the end of the day, of course, the best solution to the challenges of competitiveness and leakage is multilateral agreement on a post-2012 climate change regime that involves meaningful commitments for all major emitters. While it is inconceivable that the same level of stringency will apply to all countries irrespective of level of development

and historical responsibility for atmospheric GHG concentrations, whatever agreement is reached will represent the global consensus on the “fair” levels of action. Out of respect for the UNFCCC principle of “common but differentiated responsibilities”, any competitiveness issues that arise within the context of such an agreement would be most appropriately addressed without resort to trade measures, either multilateral or unilateral.

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## Endnotes

<sup>1</sup> World Trade Organization (2001). Doha Ministerial Declaration (WT/MIN(01)/DEC/1) paragraph 31(iii).

<sup>2</sup> In fact, of the 12 categories of goods listed in the *Friends of EGS* informal submission, arguably only 1 has a significant potential for climate change mitigation: renewable energy plants. See World Trade Organization (2007). Continued Work under Paragraph 31 (III) of the Doha Ministerial Declaration. Non-Paper by Canada, the European Communities, Japan, Korea, New Zealand, Norway, the Separate Customs Territory of Taiwan, Penghu, Jinmen and Matsu, Switzerland, and the United States of America. Committee on Trade and Environment Special Session, JOB(07)/54, 27 April 2007. The World Bank produced an analysis of the potential of low-carbon good liberalization to address climate change. It focused on 43 of the 153 goods listed in the Friends’ list. See World Bank (2008). *International Trade and Climate Change: Economic, Legal and Institutional Perspectives*. The World Bank, Washington, D.C.

<sup>3</sup> Aguilar, S., Ashton, M., Cosbey, A. and Ponte, S. (forthcoming). *Environmental Goods and Services Negotiations at the WTO: Lessons from Multilateral Environmental Agreements and Ecolabels for Breaking the Impasse*. International Institute for Sustainable Development, Winnipeg.

<sup>4</sup> Jha, V. (2008). *Environmental Priorities and Trade Policy for Environmental Goods: A Reality Check*. (ICTSD Trade and Environment Series Issue Paper No.7). International Centre for Trade and Sustainable Development, Geneva. The calculations in this paragraph are adapted from Jha’s table 3 on p. 20, which shows bound and MFN tariff rates for 2006, sourced from the World Integrated Trading Solution (WITS) database.

<sup>5</sup> Jha, V. (2008), supra note 4; Cosbey, A., Ellis, J., Malik M. and Mann, H. (2008). *Clean Energy Investment: Project Synthesis Report*. International Institute for Sustainable Development, Winnipeg.

<sup>6</sup> United Nations Environment Programme (2008). *Reforming Energy Subsidies: Opportunities to Contribute to the Climate Change Agenda*. United Nations Environment Programme, Geneva.

<sup>7</sup> For example, the influential pre-Poznan proposal by the G-77 and China for a Technology Mechanism under the UNFCCC includes a mandate for overcoming “barriers posed by intellectual property rights”. See UNFCCC (2008). Ideas and Proposals on the Elements Contained in Paragraph 1 of the Bali Action Plan. Submissions from Parties. (FCCC/AWGLCA/2008/MISC.5), 27 October 2008, at 8.

<sup>8</sup> Barton, J. (2007). *Intellectual Property and Access to Clean Energy Technologies in Developing Countries: An Analysis of Solar Photovoltaic, Biofuels and Wind Technologies*. (ICTSD Trade and Sustainable Energy Series Issue Paper No. 2). International Centre for Trade and Sustainable Development, Geneva.

<sup>9</sup> American Clean Energy and Security Act of 2009. (HR 2454). See Section 766 – International Reserve Allowance Program.

<sup>10</sup> Jiang, K. and Hu, X. (2008). China’s New Climate Change Strategy: Domestic Policy and International Politics. In ICTSD (ed.) *Trade, Climate Change and Global Competitiveness: Opportunities and Challenges for Sustainable Development in China and Beyond*. International Centre for Trade and Sustainable Development, Geneva; Zhang, Z.X. (2008). Is it Fair to Treat China as a Christmas Tree to Hang Everybody’s Complaints? Putting its Own Energy Saving into Perspective. *Energy Economics*, doi:10.1016/S0140-9883(03)00042-2.

<sup>11</sup> Cosbey, A. (2008). Border Carbon Adjustment. Background paper to the IISD/German Marshall Fund/Danish Ministry of Foreign Affairs, *Trade and Climate Change Seminar*, 18-20 June 2008, Copenhagen.

<sup>12</sup> Brack, D. (1996). *International Trade and the Montreal Protocol*. Earthscan, London.

<sup>13</sup> Hourcade, J.-C., Demailly D., Neuhoff, K. and Sato, M. (2007). *Climate Strategies Report: Differentiation and Dynamics of EU ETS Industrial Competitiveness Impacts*. Climate Strategies, London.

<sup>14</sup> Montreal Protocol, Article 4.

<sup>15</sup> Montreal Protocol Decision V/17, Fifth Meeting of the Parties, Bangkok, 17-19 November 1993.

<sup>16</sup> UNFCCC (2007). *Investment and Financial Flows to Address Climate Change*. UNFCCC Secretariat, Bonn.

<sup>17</sup> Since the US withdrawal from the scheme it will in fact probably come in at significantly less.

<sup>18</sup> Cosbey, A., Ellis, J., Malik M. and Mann, H. (2008). *Clean Energy Investment: Project Synthesis Report*. International Institute for Sustainable Development, Winnipeg; Neuhoff, K. (2008). *International Support for Domestic Climate Policies: Policy Summary*. Climate Strategies, London.



# How Should a Post-2012 Climate Agreement Address Trade-Related Environmental Measures?

*Jacob Werksman*

## 1. Trade-related environmental measures and a post-2012 climate agreement<sup>1</sup>

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To succeed, a post-2012 climate agreement will have to transform the global economy. Academics and other observers have long speculated on the need to manage the interaction between the domestic climate policies necessary to achieve this transformation and international trade rules. What has caused speculation in the abstract is now finding concrete form in domestic legislative proposals for unilateral trade measures. Trade-related environmental measures (TREMs) designed to “level the playing field” between countries that have put in place different degrees of climate regulation, are now being considered as part of the “climate packages” in several of the major trading economies.

Both the climate package recently adopted by the European Union and the most recent drafts of legislation and policy to emerge from the US Congress contemplate the use of such TREMs against products imported from countries without “comparable” climate regulation in place. The policy justifications for these measures are twofold. First, on economic competitiveness grounds TREMs are seen as protecting energy-intensive domestic industries from unfair competition with counterparts in less-regulated economies. Second, on environmental grounds TREMs are viewed as a means of preventing the “leakage” of emissions through the relocation of industry or supply chains to countries without comparably stringent emissions restrictions, or as a means of encouraging greater developing country participation in the regime. This dual justification has gained the support, at least in the United States, of labour,

industry and environmental groups, all of which seem to accept that the inclusion of TREMs in the US climate legislation has become the “price of passage” for any serious cuts in US emissions.

While the EU climate package mentions the possibility of using trade-related measures should serious leakage issues arise in the future, the US proposals have focused in more detail on the design of border adjustment measures. Energy-intensive products from a country found to have climate policies “comparable” to the policies of the importing country would enter as usual. Importers of these products from all other countries would be required to surrender carbon offsets equivalent to what would have been required of a domestic producer. Other trade-related measures have also been discussed to advance climate policy, including the use of government procurement policies, technical standards based on emissions from process and production methods, as well as export taxes meant to ensure consumers in importing countries share the costs of achieving emissions reductions in exporting countries.

Additionally, both the United States and the European Union anticipate using restrictions on the “import” of carbon offsets and allowances for use in their domestic emissions trading schemes. While these restrictions are not trade measures *per se*, they will affect the economic interests of other countries and could be an additional source of tension.

All of these measures raise concerns with regard to their compatibility with free trade

rules because they are triggered not by risks associated with the physical characteristics of traded products, but rather the manner in which the products were produced. In some cases they are promoted or designed primarily as a means of protecting domestic industry from competition, rather than as achieving a legitimate environmental objective. For these reasons, these measures are more likely to lead to trade disputes.

Those with a more internationalist perspective are concerned that these measures might undermine the global goodwill necessary to conclude a post-2012 climate agreement, and that this new generation of technical barriers to trade may further complicate relations under the World Trade Organization (WTO). Free-traders as well as supporters of the Copenhagen climate negotiations that wish to extend and expand the Kyoto Protocol fear that threats of climate-related trade sanctions will sour and slow international cooperation on these issues. Despite this growing interest in the use of TREMs, and concern about their impact on international processes, trade measures have received very little attention in the climate change negotiations thus far. Only recently have delegations begun to focus with any energy on what are referred to as

“potential environmental, economic and social consequences, including spillover effects, of tools, policies, measures and methodologies available to [developed countries]”, or “spillovers”.<sup>2</sup> Ensuring a smooth conclusion of the Copenhagen negotiations, and avoiding future conflicts over the use of climate-related TREMs may require that the climate negotiators take up the issue of TREMs more explicitly.

This article briefly reviews the way in which other multilateral environmental agreements (MEAs) have incorporated TREMs in their design. It quickly assesses the essential elements of leading US and European TREMs proposals thus far, and suggests that there is fundamental incompatibility in the way in which governments are approaching trade-related issues in domestic and international discussions that could lead to policy friction in the coming years. Finally, it suggests that, at the very least, climate and trade negotiators could reduce this friction by agreeing on a set of principles to guide the design of climate TREMs.

*“Avoiding future conflicts over the use of climate-related TREMs may require that the climate negotiators take up the issue of TREMs more explicitly”*

## **2. How multilateral environmental agreements typically incorporate, accommodate or discipline trade-related measures**

A number of MEAs have included multilaterally agreed rules on TREMs in order to advance environmental objectives, while limiting the abuse of these measures for protectionist purposes. MEAs whose objective is to prohibit or regulate the trade in species threatened by international trade or in environmentally

harmful products, such as chemicals and other hazardous substances, have either imposed or authorized in advance limits or bans in the trade of those species, products and substances (e.g. the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Stockholm Convention on

Persistent Organic Pollutants, and the Basel Convention on the Trans-boundary Movement of Hazardous Waste).

Other MEAs require or authorize the use of TREMs in order to close markets in regulated substances or resources risking overexploitation to non-Parties, or to Parties in non-compliance for the purpose of promoting ratification and compliance with international rules (e.g. CITES, the Montreal Protocol on Substances that Deplete the Ozone Layer, and various regional fisheries agreements).

These MEA TREMs are widely viewed as compatible with international trade rules because they have been mandated or authorized as the result of extensive multilateral negotiations, and they have been narrowly tailored to achieve a particular policy outcome, such as reducing the demand for endangered species, or for controlled substances. In

most circumstances the TREMs are backed by objective, scientific assessments of the environmental risks, and of how those risks are best addressed by limiting markets. Often, MEAs that mandate or authorize TREMs will contain language that echoes free trade principles contained in the WTO and elsewhere about the need to avoid disguised restrictions on trade and to design trade measures in a least trade restrictive manner.

While ambitious, these MEAs have a much narrower mandate and potential impact on trade than the climate change regime which, if it is successful, will have to reshape trade flows in fossil fuels, alternative energy technologies, energy efficient products, as well as products heavily dependent on energy for their production. This makes the narrow tailoring of TREMs and the avoidance of disguised protectionism far more challenging.

### 3. The climate change negotiations and trade-related environmental measures

The current climate change regime, composed of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, does not mandate or authorize the use of TREMs. The UNFCCC, and by reference the Kyoto Protocol, does however anticipate that such measures might be used unilaterally by Parties to combat climate change:

“The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing-country Parties, thus enabling them better to address the problems of climate change. Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or

unjustifiable discrimination or a disguised restriction on international trade.”<sup>3</sup>

The Kyoto Protocol elaborates this principle a bit further by requiring that:

“The [developed country] Parties included in Annex I shall strive to implement policies and measures... in such a way as to minimize adverse effects, including... effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties.”<sup>4</sup>

While helping to focus concern on the potential impacts of trade measures on developing countries, this text does little more than guide Parties towards the kinds of TREMs that would



balance those concerns with the need to reduce emissions.

In the meantime, as support for action on climate change grows across major economies, a significant gulf in expectations between Parties remains. Debates over the best metrics to ensure comparability of effort and differentiation among Parties lie at the heart of the post-2012 negotiations on effort sharing—both transatlantic and North-South. The European Union and the United States cannot agree on an appropriate base year from which to measure their efforts, and developing countries that are major emitters of greenhouse gases (GHGs) are resisting any mechanism that would formally differentiate their efforts from the efforts of least developed countries. The likelihood of reaching a negotiated outcome that is fully accepted as fair by domestic policymakers in different trading Parties is slim.

In the absence of a multilateral agreement on commitments that satisfies all sides, Parties will no doubt reach towards unilateral

mechanisms (carrots and sticks, incentives and disincentives), including TREMs, to bridge this gulf of expectations, and to satisfy domestic constituencies that will want to be assured that trading partners are sharing the effort to reduce GHG emissions. As has been noted, conventional wisdom and powerful alliances of environmental, labour and industry groups have emerged around TREMs as the “price of passage” in the United States and the European Union.

China is mustering arguments on “embedded carbon” which would support the use of export taxes as a means of ensuring that Western consumers will help bear the costs of emissions impacts and reductions in exporting countries. While this suggests a possible consensus on the need to account internationally for carbon emitted in production processes, it raises the additionally vexing question of which country—the exporter or the importer—should have the authority to impose and collect the revenue from any border adjustment measures.

#### **4. An internationally agreed standard for “comparability”**

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This situation cries out for further, multilaterally agreed guidance, on what a fair balance of commitments looks like, and on how TREMs could legitimately address any remaining imbalances. Key to this is agreement on the meaning of the word “comparable”.

The Bali Action Plan (BAP), which is guiding the current negotiations on a post-2012 climate regime, uses the term “comparable” as a means of ensuring that rich countries that are not party to the Kyoto Protocol (e.g. the United States) undertake commitments that are comparable to rich countries that are Kyoto Protocol Parties (e.g. the European Union). There is no equivalent language in the BAP to

ensure that developing country actions that might be agreed at Copenhagen must also be “comparable” to those of rich countries. Developing country climate negotiators see this distinction as one of several important “firewalls” in the negotiations designed to prevent rich countries from demanding from developing countries (particularly the major emitters) actions that are comparable to rich country commitments.

However, the plain meaning of the word “comparable”, as well as the use of that word in other contexts (US legislative discourse and WTO jurisprudence) suggests that the term “comparable” is an appropriate

standard for determining which countries might legitimately be targeted with TREMs. In these circumstances, it would seem to be in the developing countries' interests to have the UNFCCC process formally recognize that what they sign up to do in Copenhagen is, given the circumstances, "comparable" to what is expected of Annex I countries.

As the US Congress has been developing climate change legislation it has used the term "comparable" as the standard by which it will assess the efforts being made by its trading partners to limit their GHG emissions. In an effort to address competitiveness concerns, the United States will require importers from countries found by the United States to have failed to take comparable action, to purchase carbon offsets equivalent to those that were required of US producers.

***"The likelihood of reaching a negotiated outcome that is fully accepted as fair by domestic policymakers in different trading Parties is slim"***

The term "comparable" in the US draft legislation is not drawn from the BAP, but from WTO jurisprudence. In 1997, several Asian countries challenged a US import ban on shrimp imported from countries the United States had unilaterally determined were failing to protect sea turtles from drowning in shrimping nets in a manner essentially the same as required of US shrimpers. The US trade measures were eventually upheld by the WTO Appellate Body when the United States adjusted its regulation to allow greater flexibility to shrimp importers. The Appellate Body found that when the United States shifted its standard from requiring measures essentially the same as US measures to "the adoption of a program[me] *comparable* in effectiveness" this new standard would comply with WTO disciplines. Many—though not all—trade lawyers that have evaluated the draft US climate legislation have expressed the view that the *Shrimp-Turtle* case opens the

door for US climate legislation that bases trade measures on an evaluation of the "comparability" of climate policies taken by other exporters.

If such a case were to come before a WTO panel, the panel would likely look to the practice of the climate Parties to assess whether the United States had followed an international standard when determining comparability. If the climate Parties have said nothing more about the concept of comparability, and have not made an effort to discipline the use of unilateral trade measures by Parties, the panel will have no choice but to fall back on the *Shrimp-Turtle* jurisprudence, and would be influenced by the fear of the political fallout from overturning US climate policy.

Until now, leading developing countries appear to be comfortable with WTO rules and institutions defending

their interests in any dispute that may arise over climate-based TREMs. In July 2008, G-5 ministers agreed that:

"in the negotiations under the Bali Road Map, we urge the international community to focus on the core climate change issues rather than inappropriate issues like competitiveness and trade protection measures which are being dealt with in other forums".<sup>5</sup>

This article suggests, on the contrary, that the UNFCCC might play a stronger role in protecting developing countries from arbitrary US trade measures than the WTO.



## 5. A possible way forward

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Until recently, the little negotiating space available to exchange views on the impacts of response measures has focused on the effect that climate regulations might have on demand for fossil fuel exports from “countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products”,<sup>6</sup> as described under the Convention. These largely fruitless debates have been less about trying to reduce trade frictions that might result from TREMs, and more about whether oil exporting developing countries should be entitled to compensation for lost sales.

Recent submissions have sought to broaden this discourse to include other “spillover” effects from climate policy—both positive and negative. The handful of country submissions on this topic so far hint at the kind of economic impact of TREMs that might be at issue, listing “food miles and biofuels”.<sup>7</sup> This suggests a growing interest in the impacts of carbon-related technical standards or labelling schemes aimed at alerting consumers to the carbon footprint of products. It may also reflect concern about the recent impact that incentives to promote ethanol production may have had on food prices.

The Chair of the “spillover” discussions summarized the debate thus far as focusing on “possible approaches to grouping actions, taken by Annex I Parties, including actions leading to changes in technologies; switching from international to local sourcing; the adoption of standards; and tariffs, taxes and subsidies or other trade-distorting policies”. He also noted that “consideration should be given to the potential role of relevant actors, including international organizations, outside the UNFCCC process”, presumably the WTO.<sup>8</sup>

The negotiations may be inching towards the inevitable recognition that domestic climate policies, by deploying TREMs to respond to competitiveness and leakage concerns, may raise significant trade issues. If and when they get there, the Parties may wish to maintain some degree of multilateral discipline over the use of unilateral trade measures. This would help avoid the potential WTO chilling effect on environmentally justifiable unilateral trade measures, but at the same time borrow from WTO principles (which have already been incorporated into the UNFCCC and the Kyoto Protocol) to discourage disguised protectionism.

A post-2012 climate agreement could, at the very least, reiterate and expand upon principles of fairness and effectiveness shared by the climate and trade regimes that are relevant to disciplining unilateral TREMs. Such a statement could clarify that the UNFCCC cannot be argued to require, authorize or justify TREMs in circumstances that do not comport with these principles. Basic among these principles are:

- the pursuit, in good faith, of multilateral agreement before resorting to unilateral TREMs;
- the transparency of measures, including the opportunity for advance notice, comment and appeal by affected Parties;
- the absence of disguised discrimination or arbitrariness in the application of TREMs across different products and countries of origin;
- differentiation in the application of TREMs in a manner that takes into account the national circumstances of the trading partner; and
- proportionality of the trade restrictiveness of the measure to the environmental effectiveness of the measure.

Finally, with regard to the standard of “comparability”, Parties may wish to secure the express acknowledgment of all Parties to the Copenhagen agreement that whatever commitments or actions are reflected in that agreement represent the international standard for what is an appropriate and “comparable” level of efforts.

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## Endnotes

<sup>1</sup> The arguments in this article were developed further in Werksman, J. and Houser, T. (2008). *Competitiveness, Leakage and Comparability: Disciplining the Use of Trade Measures under a Post-2012 Climate Agreement*. World Resources Institute, Washington, D.C.

<sup>2</sup> See e.g. UNFCCC, FCCC/KP/AWG/2008/MISC.5 and FCCC/KP/AWG/2008/MISC.1 and Add. 1.5 and Add.1/Corr.1. and FCCC/KP/AWG/2009/MISC.4.

<sup>3</sup> Kyoto Protocol, Article 3.5.

<sup>4</sup> Kyoto Protocol, Article 2.3.

<sup>5</sup> G-5 Political Declaration of the Leaders of Brazil, China, India, Mexico and South Africa, Sapporo, Japan, 8 July 2008.

<sup>6</sup> UNFCCC, Article 4, para. 8(h).

<sup>7</sup> See excerpts from the submissions of AOSIS and New Zealand in UNFCCC, FCCC/AWGLCA/2008/16/Rev.1\*. Ideas and Proposals on Paragraph 1 of the Bali Action Plan Revised Note by the Chair, 15 January 2009, para 82.

<sup>8</sup> See UNFCCC, FCCC/KP/AWG/2008/L.17, Consideration of Information on Potential Environmental, Economic and Social Consequences, including Spillover Effects, of Tools, Policies, Measures and Methodologies Available to Annex I Parties, 10 December 2008.



# Incentive Mechanisms and Climate-Friendly Technologies

Muthukumara Mani

## 1. Introduction

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Climate risk management is fundamental for preserving and enhancing development progress in many developing countries. Successful mitigation efforts by the global community will reduce the burden of adaptation. At the same time, adaptation to climate risks and low-carbon growth options are often directly linked to national development priorities and business opportunities in areas such as energy efficiency, renewable energy, sustainable livelihoods, environmental protection, and infrastructure resilience.

While accelerating economic growth is a priority in developing countries, climate action can, and should, result in multiple local benefits including commercial, developmental and environmental. Lessons from the World Bank Clean Energy Investment Framework and many other long-standing World Bank and International Finance Corporation initiatives show that the best entry points to effective national dialogue and programme development on climate change arise from the synergies between development progress, and the business opportunities of investing in energy efficiency, renewable energy and other low-carbon projects. The scope for cost-effective, pro-development investments in energy efficiency and, increasingly, renewable energy is particularly broad, especially against the background of rising oil prices.<sup>1</sup>

According to the Intergovernmental Panel on Climate Change (IPCC), the stabilization of

greenhouse gas (GHG) concentrations to as low as 450 parts per million (ppm) CO<sub>2</sub> equivalent (CO<sub>2</sub>-eq.) can be achieved by deploying technologies that are currently available or expected to be commercialized in the coming decades in the energy supply, transport, buildings, industry, agriculture, forests, and waste management sectors.<sup>2</sup> The 450 ppm CO<sub>2</sub>-eq. limit corresponds to an increase in global temperature of 2°C, which is the threshold beyond which risks are considered excessive and unacceptable.<sup>3</sup> Robert Socolow and his colleagues introduced the concept of “stabilization wedges”, which is helpful in understanding the scale of the challenge in order to stabilize carbon emissions by 2054.<sup>4</sup> They divided the amount of emissions to be avoided into seven stabilization wedges with each wedge having the potential to reduce emissions by an increasing amount per year, starting at very low levels now and reaching 1 gigatonne (Gt) per year by 2054 by which time emissions of CO<sub>2</sub> will have been reduced by a cumulative 25 Gt. The emissions reduction potential of each wedge relies on a well-known and industrially-implemented technology in the fields of energy conservation, renewable energy, enhanced natural sinks, nuclear energy and fossil carbon management. All in all, Socolow et al. propose 15 technologies able to deliver such reductions.<sup>5</sup>

The magnitude of the resources needed to finance access to, and implementation of, environmentally sound technologies and processes is such that the bulk must be

***“While accelerating economic growth is a priority in developing countries, climate action can, and should, result in multiple local benefits”***

provided through private sources with the public sector playing a catalytic and facilitating role. The degree to which such a transition will be successful is highly dependent on the establishment of the necessary enabling

environments within the host country, complemented by the development of endogenous capacities to adopt, operate, and maintain the technology.

## 2. Current channels of technology transfer under the United Nations Framework Convention on Climate Change

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The Kyoto Protocol defines three mechanisms—Joint Implementation, the Clean Development Mechanism (CDM), and international emissions trading—to help industrialized country Parties lower the overall costs of achieving their emissions targets by allowing them to reduce emissions, or increase GHG removals, in other countries where it may be more cost effective. These mechanisms, and in particular the CDM, were also intended as vehicles for transferring cleaner technology to developing countries. However, the projects implemented through the CDM are demonstrably too small in scale and the processes too convoluted to deliver the technology to the extent required for rapid climate change mitigation. In 2001, the United Nations Framework Convention

on Climate Change's (UNFCCC) Expert Group on Technology Transfer (EGTT) was commissioned to develop proposals to facilitate and advance technology transfer activities under the Convention. Apart from initiating technology assessments and studies on enabling environments, the EGTT has so far produced a guidebook on preparing technology transfer projects.<sup>6</sup> Given the limitations of the current approach and magnitude of the technology transfer required to combat GHGs, one is forced to relook at the more traditional mechanisms of trade and investment which have been the conduits for global technology transfer, such as foreign direct investment (FDI), import of equipment and products and licensing agreements.

## 3. Trade

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The Stern Review identifies the transfer of energy-efficient and low-carbon technologies to developing countries as critical to reducing the energy intensity of production. It further observes that “the reduction of tariff and non-tariff barriers for low-carbon goods and services, including within the Doha Development Round of international trade negotiations, could provide further opportunities to accelerate the diffusion of key technologies”.<sup>7</sup>

Looking at the removal of tariff and non-tariff barriers, a recent World Bank study finds that it can significantly increase the diffusion of clean technologies in developing countries.<sup>8</sup> Within

the context of current global trade regimes, the study indicates that a removal of tariffs and non-tariff barriers for four basic clean energy technologies (wind, solar, clean coal, and efficient lighting) in 18 of the high-emitting developing countries will result in trade gains of up to 13 per cent. If translated into emissions reductions, these gains suggest that within a small subset of clean energy technologies, and for a select group of countries, the impact of trade liberalization could be substantial.

The study further suggests that by agreeing to liberalize trade on a smaller set of climate-friendly technologies, the ongoing World

Trade Organization (WTO) negotiations on environmental goods and services have the potential to contribute significantly to both trade liberalization and climate change efforts. Another less ambitious option according to the study may be to have a plurilateral agreement, along the lines of the WTO Agreement on Government Procurement, which would be outside the single undertaking with trade benefits extending only to signatories to the agreement. In both cases, the “climate package” could represent a subset of products derived from the larger environmental goods negotiations with the initial aim of immediate elimination of tariffs and subsequently non-tariff barriers.

Developing countries, however, perceive the environmental goods negotiations as focusing primarily on products of export interest to developed countries and would like to see the inclusion of more products of export interest to them. Consequently, there are fewer incentives for developing countries to embrace freer trade in climate-friendly goods. To create these incentives, one might call for *smarter* trade as an adjunct to freer trade.

This could imply measures to enhance export opportunities for developing countries by

including products of interest to them in any “climate-friendly” package. Implementation of any agreement on climate-friendly goods and technologies will also need to include a package for technical and financial assistance to enable developing countries to deal with implementing liberalization, and particularly challenges created for customs in efficient administration of imports and harmonizing classification. Synergies with regard to technical assistance within trade facilitation negotiations could also be considered.

In addition, one could take into account other technical and financial assistance measures in the context of existing programmes, such as “aid for trade” packages, to help countries deal with any adverse shocks of liberalization, as well as enable them to meet standards and certification requirements and emerge as important and competitive producers and exporters of climate-friendly goods and technologies. A component for trade-related climate change initiatives could become part of any “aid for trade” package. Lastly, as was done in case of the Information Technology Agreement, developing countries could be given longer phase-in periods to join an agreement.

## 4. Investment and intellectual property rights

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Even if trade is liberalized, streamlining of intellectual property rights (IPRs) rules and other domestic policies will further aid in widespread assimilation of clean technologies in developing countries. While FDI can be an important means of transferring technology, weak IPR regimes (or perceived weak IPRs) and other barriers in developing countries often inhibit diffusion of specific technologies beyond the project level. These barriers range from weak environmental regulations, fiscal feasibility, financial and credit policies, economic and regulatory reforms, and the

viability of technology to local conditions (including availability of local skills and know-how). Thus, the existence of IPRs needs to be complemented with appropriate infrastructures, governance and competition systems in order to be effective. However, it is argued by some that the market power provided by patents and other IPRs over technologies—by allowing owners to limit the availability, use, or development of a process or product—may also result in prices that exceed the socially optimal level and hamper the transfer of these technologies.<sup>9</sup> Given the

two extreme views, one has to take a more nuanced approach to the IPR issue in the context of climate change and keep in mind the critical need of technology transfer and the broader public policy objective of reducing GHG emissions. Some specific measures to overcome the IPR barriers that have been suggested include patent buy-outs, reduction of tariffs on sale of technologies, a global clean-energy venture capital fund, transfer of technologies to the public domain, licensing schemes with reduced duration of IPRs, and flexible technology transfer mechanisms.<sup>10</sup>

On the international side, there is no clear global regime governing clean technology investments. In the absence of a multilateral agreement on FDI in manufacturing, over 2000 bilateral investment treaties (BITs) indirectly assume importance. Although there is much variability in their coverage, they typically provide for non-discriminatory treatment for foreign-owned firms and opportunities for

dispute settlement. Traditionally, BITs have been negotiated on an as-needed basis by countries. There is a need to explore mechanisms to encourage clean-energy investments in free trade agreements and BITs. Particular attention is needed to ensure that investment is channelled to the right sectors and the right technologies.<sup>11</sup>

Technology is needed in least developed and small developing countries as an engine of development, and the challenge is to ensure that it does indeed come, and what comes does not contribute unduly to global climate change.<sup>12</sup> As well, technology is needed in the fast-growing developing economies to help blunt the effects of growth on global climate change. There is no bright line separating these categories of countries, but to the extent that their situations differ, so do the needs and dynamics of each with respect to climate-related technologies.

## 5. Official development assistance

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Official development assistance (ODA) has been a major source of energy sector investments in developing countries and could significantly influence future GHG emissions. Following the G8 Gleneagles communiqué of 2005<sup>13</sup>, bilateral and multilateral donors have responded to the increasing challenge of climate change with an agenda for action to integrate climate concerns into the mainstream of developmental policymaking and poverty-reduction agendas. A number of sectoral and thematic initiatives are also underway, ranging from clean-energy technology and energy efficiency initiatives to the development of carbon markets and sustainable transport alternatives.<sup>14</sup>

The World Bank has prepared a Climate Change Strategy to better integrate climate change in the broader sustainable

development objectives.<sup>15</sup> The World Bank Group has committed about US\$ 1.4 billion in loans, credits, equity investments and guarantees for low-carbon projects in 2007-2008. Moving forward, the key issues for the Bank relate to the need for financing, accelerating commercialization of new technologies, and promoting development while minimizing GHG emissions.

The regional development banks have also been active. The Asian Development Bank is focusing on infrastructure development and finance, especially in the energy, transport, agriculture and water sectors. The Asian Development Bank established the Clean Energy Financing Partnership Facility in April 2007, which is designed to finance: (a) smaller energy efficient investments that require quick and efficient



transactions; (b) technology transfer costs of clean technologies for a small number of high impact, large interventions that will catalyze deployment of clean-energy technologies; and (c) grant assistance for activities such as developing the knowledge base, advocacy, and institutional capacity building.

The European Bank for Reconstruction and Development's (EBRD) climate change initiatives include supporting efforts to develop renewable energy sources as a means of reducing the region's dependence on

fossil fuels. EBRD's Sustainable Energy Initiative will more than double EBRD investment in this area to € 1.5 billion. Similarly, the Inter-American Development Bank's Sustainable Energy and Climate Change Initiative is designed to respond to these challenges in the region by expanding the development and use of renewable energy sources, energy efficiency technologies and practices, and carbon finance.

In addition to their involvement in the energy sector, the multilateral development banks also exert significant influence by:

(a) supporting policies to promote low-carbon growth globally and nationally (e.g. changes in price regimes); (b) supporting enabling regulatory and investment environments for renewable energy and energy efficiency; (c) helping develop mature, efficient, and accessible carbon markets; and (d) stimulating investment in the dissemination of climate-friendly technology.

***“The time is right for introducing new RD&D approaches”***

Many developing countries with assistance from the multilateral and bilateral donors are in the process of rapidly

expanding programmes designed to increase energy access, and these same countries, consistent with the UNFCCC principle of “common but differentiated responsibilities”, are already beginning to take action to shift their economic growth strategies to include technology and management options that will minimize GHG generation while maintaining social and economic development objectives. ODA could thus be a critical instrument in providing the enabling environment for achieving low-carbon growth paths.

## 6. Research, development and deployment

While increased spending will certainly be required for rapid development, deployment and diffusion of clean technologies, creative approaches and novel paradigms beyond traditional research, development and deployment (RD&D) vehicles will be necessary to accelerate energy technology innovation on the scale and in the time frame required. The time is right for introducing new RD&D approaches to inform and influence many of the new initiatives now being launched.

Lessons learned from initiatives in other sectors such as the Consultative Group on International Agricultural Research, Advanced Market Commitments, and the Human Genome Project can strengthen the development of new technology initiatives, which will address the needed balance between climate mitigation and the growing energy demands of the developing world.



## 7. Carbon markets

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Finally, pricing of carbon is critical for development and dissemination of clean-energy technologies as it will create the economic incentives needed for private actors to take action. In addition to the development of mature carbon markets, getting carbon prices right would involve: (a) eliminating fossil fuel subsidies; (b) taxing carbon emitters; (c) using shadow pricing or social cost of carbon in project analysis; and (d) using carbon markets to buy down the cost of reducing carbon emissions in projects.

William Nordhaus argues for a harmonized carbon tax mechanism, in which countries would tax carbon emissions at an internationally

harmonized “carbon price”.<sup>16</sup> Consequently, if carbon prices are equalized across all countries, there will be no need for countries to restrict flow of technology through tariffs or other border adjustments. While much work on the details would be required, he suggests that this is a familiar terrain because countries have been dealing with problems of tariffs, subsidies, and differential tax treatment for many years through the WTO. The Kyoto Protocol also specifically mentions as one of the measures that Parties could adopt to help achieve their emission targets “progressive reduction or phasing out of market imperfections and subsidies in all greenhouse gas emitting sectors”.<sup>17</sup>

## 8. Concluding remarks

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The past years witnessed impressive consensus-building on the urgency of addressing climate change that culminated in an agreement by the 13th Conference of the Parties of the UNFCCC in Bali in December 2007 to launch negotiations towards comprehensive and long-term cooperative action by all countries. The framework for negotiations embraces mitigation of climate change, adaptation, technology development and transfer, and provision of financial resources in support of developing country actions. Yet, available estimates point to a financial gap in the order of hundreds of billions of US dollars per annum for several decades. This is much beyond the current funds available through the dedicated global financing mechanisms, such as the Global Environment Facility and international emissions trading.

It is thus critical to any future climate regime to help developing countries access additional

financial resources, technology, technical assistance and knowledge, and effectively use those in their national, regional and local policies and programmes so as to reconcile development needs with climate risks and constraints. This article has outlined a number of approaches that can facilitate transfer of climate-related technologies and measures that could be taken to overcome the barriers, including the removal of tariff and non-tariff barriers to trade in these technologies. However, trade liberalization should not be seen as a panacea. Promoting enabling environments for financial and technological transfer is also critically important.

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## Endnotes

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<sup>1</sup> In 2007, only 20 per cent of the overall investments in renewable energy were made in developing countries. See UNEP (2008). *Global Trends in Sustainable Energy Investment 2008 Report*. United Nations Environment Programme, Geneva.

<sup>2</sup> IPCC (2007). Summary for Policymakers. In *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds.), Cambridge University Press, Cambridge.

<sup>3</sup> See e.g. European Council (1996). Council meeting, Luxembourg, 25 June 1996—environment (PRES/96/188). Council of the European Union, Brussels and European Council (2005). Presidency Conclusions of the European Council, Brussels, 22 and 23 March 2005. Council of the European Union, Brussels.

<sup>4</sup> The authors base their demonstration on a 50-year period, from the 2004 publication of the article to 2054.

<sup>5</sup> Socolow, R., Hotinski, R., Greenblatt, J. and Pacala S. (2004). Solving the Climate Problem. Technologies Available to Curb CO<sub>2</sub> Emissions, *Environment* 46(10), 8-19.

<sup>6</sup> The UNFCCC Secretariat in close collaboration with the EGTT developed the UNFCCC guidebook on preparing technology transfer projects for financing, which could be used as a tool to enable countries to transform project ideas resulting from Technology Needs Assessments and other sources into project proposals for financing. While recognizing that no single formula or template exists for preparing a successful project proposal, the guidebook concentrates on common ingredients that most well prepared proposals contain. The overall objective was to bring together the shared experience of Champions—the people who convert ideas into action—and Enablers—the people who have the resources and knowledge Champions need—in preparing and presenting successful project proposals.

<sup>7</sup> Stern, N. (2006). *Stern Review on the Economics of Climate Change*. HM Treasury, London.

<sup>8</sup> World Bank (2007). *International Trade and Climate Change: Economic, Legal, and Institutional Perspectives*. World Bank, Washington, D.C.

<sup>9</sup> Hoekman, B., Maskus, K. and Saggi, K. (2004). *Transfer of Technology in Developing Countries: Unilateral and Multilateral Policy Options*. World Bank, Washington, D.C.

<sup>10</sup> Agarwala, R. (2008). *Towards a Global Compact for Managing Climate Change*. Discussion Paper 08-22. Harvard Project on International Climate Agreements. Cambridge, MA.

<sup>11</sup> IISD (2008). *Clean Energy Investment: Policymakers' Summary*. International Institute for Sustainable Development, Winnipeg.

<sup>12</sup> ICTSD (2008). *Climate Change, Technology Transfer and Intellectual Property Rights*, Trade and Climate Change Seminar 18-20 June 2008, Copenhagen, Denmark. International Center for Trade and Sustainable Development, Geneva.

<sup>13</sup> Multilateral organizations developed the Clean Energy for Development Investment Framework in response to the G8 request for an Investment Framework on Climate Change, Clean Energy and Sustainable Development, in the context of the Gleneagles Communiqué which was issued in July 2005.

<sup>14</sup> Asian Development Bank, African Development Bank, European Bank for Reconstruction and Development, European Investment Bank, Inter-American Development Bank and World Bank (2007). *The Multilateral Development Banks and the Climate Change Agenda. A Joint Report*.

<sup>15</sup> World Bank (2008). *Development and Climate Change: A Strategic Framework for the World Bank Group*. World Bank, Washington, D.C.

<sup>16</sup> Nordhaus, W. (2007). To Tax or Not to Tax: Alternative Approaches to Slowing Global Warming, *Review of Environmental Economics and Policy* 1(1), 26-44.

<sup>17</sup> *Ibid.*



# Climate Adaptation and Trade: Key Challenges and Options for Agriculture in Small Developing Countries

*Moustapha Kamal Gueye, Jonathan Hepburn, Mahesh Sugathan, and Marie Chamay*

## 1. Introduction<sup>1</sup>

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Adapting to climate change is one of the greatest challenges facing the vast majority of developing countries. This is particularly so for the least developed countries (LDCs)<sup>2</sup>, small and vulnerable economies (SVEs)<sup>3</sup>, and small island developing states (SIDS)<sup>4</sup>. Many of these countries are highly vulnerable to the impacts of climate change, such as droughts, floods, hurricanes and rising sea levels. In addition, they may be harmed by some responses to the challenges of climate change taken by other countries and the international community.<sup>5</sup> While LDCs, SVEs and SIDS represent only a small portion of world trade, they are often among the most trade-dependent countries in the world.<sup>6</sup> Their key trade sectors, such as agriculture, fisheries and tourism, will be particularly affected by climate change, yet many of these countries have already struggled to diversify their economies, with limited

success.<sup>7</sup> All these factors make LDCs, SVEs and SIDS particularly vulnerable to emerging climate change challenges.

Given the importance of trade in the economies of these countries, trade policy will be an important element to strengthen their resilience to external shocks, including those arising from climate change impacts and policies. However, as countries focus on addressing their adaptation needs, trade remains largely uncharted territory. Sectors that provide the greatest trade potential for many developing countries, such as agriculture, will be most affected by climate change, and therefore the most in need of adaptation. It is therefore important that decision-makers responsible for climate change and trade address the need for adaptation in the agricultural sector and in other trade-exposed sectors.

## 2. The impact of climate change on agriculture

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In many parts of the developing world, agriculture accounts for a significant part of gross domestic product (GDP) and supports the livelihoods of large populations, as well as providing a crucial source of foreign exchange. The continued health of the sector will be crucial for sustained poverty reduction and the achievement of several of the Millennium Development Goals (MDGs).

Climate change is expected to lead to a number of environmental changes that will

affect agricultural production and trade, both directly and indirectly. Growing aridity is likely to affect agricultural productivity in some world regions, such as southern Africa and some parts of Asia and Latin America, especially where accompanied by land degradation and soil erosion. Water scarcity, and associated pressure on water resources for agriculture, is also likely to become an important issue. The Intergovernmental Panel on Climate Change (IPCC) forecasts that by 2020, rain-fed agricultural production

in several sub-Saharan African countries could decline by up to 50 per cent. On the other hand, in temperate regions, production may increase due to warmer weather.<sup>8</sup>

Production and trade patterns are likely to change as some regions become less suited to agricultural production, and others become

better adapted. Currently, experts anticipate that the production potential of mid- to high-latitudes is likely to increase, and to decrease in low latitudes, where most of the developing countries are situated (see Figure 1). As a result, trade flows of high-latitude and mid-latitude products are expected to increase, with goods such as cereals and livestock products being exported towards low-latitude regions. According to certain estimates cited in the IPCC Fourth Assessment Report, by 2080 cereal imports by developing countries would rise by 10-40 per cent. Overall, however, the exact nature of these shifts in production and trade patterns remains unclear, and more research is needed before policymakers can properly understand the likely implications.

Changes in agricultural productivity will exacerbate many of the agricultural and food security challenges already facing the world's poorest countries. According to IPCC

reports, agricultural prices are expected to increase by up to 20 per cent in the short and medium term. Although it is difficult to pinpoint exactly how much climate change is contributing to this challenge, by 2080 about

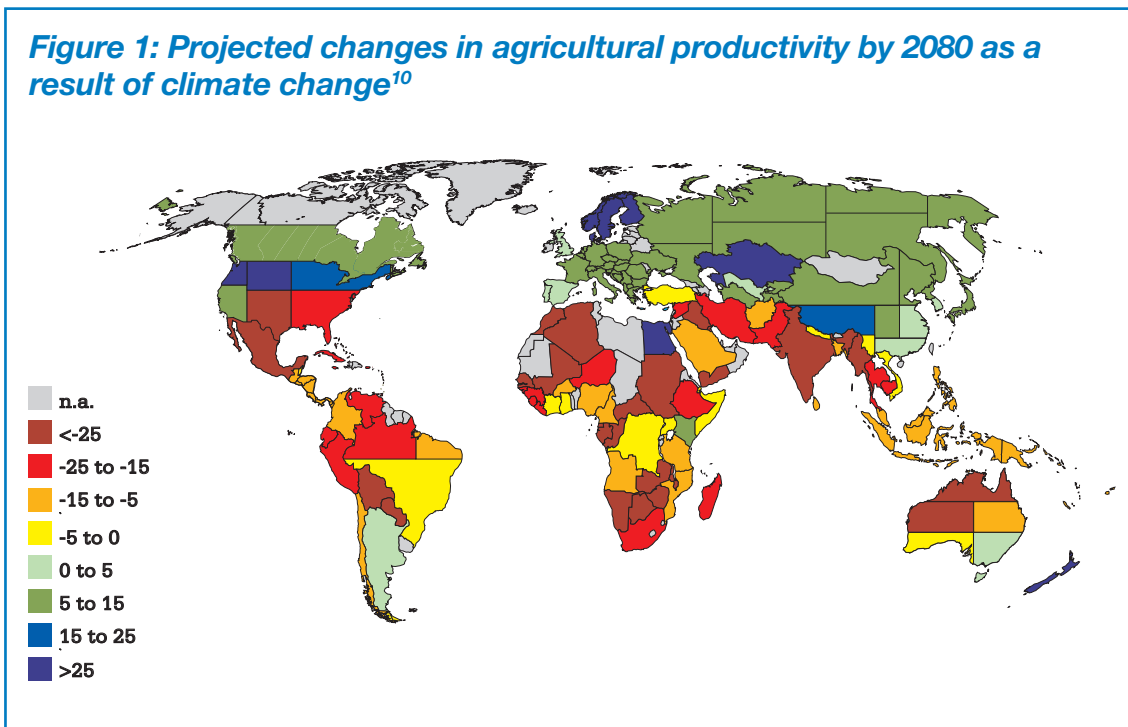
768 million people are likely to be malnourished. Sub-Saharan Africa is likely to surpass Asia as the most food-insecure region, mostly because of

the projected socioeconomic developments for the different developing regions, but also in part due to climate impacts. Studies using various IPCC scenarios and model analyses indicate that by 2080 sub-Saharan Africa may account for 40-50 per cent of all undernourished people, compared to about 24 per cent today.<sup>9</sup>

Along with increased global temperatures, climate change will probably lead to increased volatility in climatic conditions: this is likely to have major ramifications for agriculture, with producers being less capable of predicting weather patterns and environmental conditions, and trade flows consequently becoming more erratic and unpredictable. While price volatility has long been a concern of developing country commodity producers, climate change will make this issue a systemic concern.

***“As countries focus on addressing their adaptation needs, trade remains largely uncharted territory”***

**Figure 1: Projected changes in agricultural productivity by 2080 as a result of climate change<sup>10</sup>**



### 3. Adapting to the impacts of climate change

The IPCC defines the adaptation process as an “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities”.<sup>11</sup> The impacts of climate change, from more frequent and intense weather events to changing patterns of temperature and precipitation, will be felt disproportionately by the poor, who are in general both more exposed and less equipped to cope. Complicating the picture is the fact that the areas most likely to be affected by climate change—agriculture, biodiversity, and forests, to name a few—include some with the greatest potential for trade in many developing countries.

The boundaries of what constitutes adaptation policy are by definition blurred. Much of

what we think of as traditional development policy boosts adaptive capacity as well. A new water source, or a new road, or human capital-boosting investments in education and health, would all raise a community’s human development assets. They would also be likely to better equip inhabitants to deal with climate change (or to participate in international trade, for that matter). Insofar as trade-driven economic growth helps to give poor people and poor countries more resources, it will help with adaptation.

What is uniquely “adaptive” about development policies, according to a report by the World Resources Institute and the International Institute for Sustainable Development, is not how solutions are implemented, but how problems are defined, strategies selected, and

***“Trade-distorting subsidies tend to encourage unsustainable production techniques that damage the environment and may contribute to climate change”***

priorities set.<sup>12</sup> Smart adaptation strategies would involve “climate-proofing” development efforts: reducing the new water source’s vulnerability to climate change, for example, or ensuring that new roads can withstand more frequent flooding. A clear delineation of what constitutes adaptation activities, even if it might seem artificial, is essential to mobilize funding to support adaptation.

While adaptation projects should increase the resilience of communities over and above a “without-adaptation” baseline, widely varying conditions in different places mean that there can be no “one-size-fits-all” strategy.

#### **4. Trade tools and instruments with implications for agricultural adaptation efforts**

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Economic and trade regulatory frameworks provide a range of opportunities for harnessing action in support of climate change objectives. In recognition of these linkages, the Bali Road Map envisages action on climate change, including through “opportunities for using markets to enhance cost-effectiveness of, and to promote mitigation actions”, as well as “means to incentivize the implementation of adaptation actions”.<sup>13</sup> In so doing, the Road Map recognizes the “catalytic role of the Convention in building on synergies among activities and processes, as a means to support mitigation in a coherent and integrated manner”.

Orthodox economic theorists as well as leading World Trade Organization (WTO) officials like Director-General Pascal Lamy emphasize that trade liberalization—the removal of trade barriers such as tariffs and the elimination of trade-distorting subsidies—is crucial in ensuring the efficient allocation of productive resources.<sup>14</sup> This would concentrate production in those regions that are most able to cope with (or even benefit from) climate change. The role of governments, in this view, is limited to investment in agriculture, ensuring the free flow of trade and supporting research (such as into new technologies that may support adaptation).

While the removal of trade-distorting subsidies is clearly important in allowing producers to respond to market signals, there may nonetheless be grounds for caution in assuming that trade liberalization will automatically lead to an adequate adaptation response in the agricultural sector. Rather, trade policy reform needs to be seen as part of a broader package of policy measures that are interlinked and mutually supportive. In the absence of supporting measures, and in particular of an appropriate regulatory framework, trade liberalization may hinder countries’ ability to adapt appropriately to climate change and ensure food security for their populations.<sup>15</sup> Some of the adaptation options would require investment in research and development for the engineering of new cereal varieties, adapted to new climatic conditions. In the absence of a secure market, and large inflow of imported agricultural products, it is unlikely that investors will have an incentive to pour resources in the development of new varieties for domestic markets. This is one of the reasons for the neglected and limited investment in agriculture in regions such as Africa, over the past 20 years.

In this context, trade and climate policymakers need to give adequate attention to the needs of smallholder farmers and rural communities, especially in the developing world. In addition



to the evident imperative to ensure the food security of these poor communities, governments also need to take into account the fact that the knowledge and practices of these producers may offer new solutions. Not only do small farmers frequently practise more sustainable traditional agricultural practices such as crop rotation and mixed cropping, leaving land lying fallow, and the use of low levels of artificial chemical inputs, they are also often the custodians of agricultural biodiversity, selecting and sharing seeds of plant varieties that are particularly well suited to local conditions. In the context of a changing global climate, this storehouse of biodiversity could be critical in developing the varieties that are needed to adapt to a changing world environment.

In the current Doha Round of trade negotiations, governments have discussed various mechanisms that will allow developing countries to protect small farmers and rural communities. These include the “special products” that will be eligible for gentler tariff cuts, or the “special safeguard mechanism” that will allow developing countries to raise tariffs temporarily in the event of an import surge or price depression. To the extent that these mechanisms are accompanied by other measures aimed at reinforcing the competitiveness of developing country agriculture, they may provide a tool for developing country governments to support their small-scale producers to adapt to climate change, while maximizing their potential contribution to mitigation efforts.

Trade-distorting subsidies tend to encourage unsustainable production techniques that damage the environment and may contribute to climate change. Examples include over-stockage of livestock, leading to soil compaction, or overuse of artificial chemical inputs that release nitrous oxide. However, the diverse nature of subsidies allowed under the WTO green box<sup>16</sup> means that the reverse is not necessarily the case: while some green

box subsidies support the achievement of environmental objectives, others may be neutral or even harmful for the environment, potentially undermining climate change goals.

The current Doha Round of trade negotiations is expected to reduce substantially the maximum permitted level of overall trade-distorting support that countries provide, even though it is unlikely to cut deeply into the lower “applied” level of subsidies that countries actually spend. However, climate change objectives are more likely to be realized if governments agree to prevent future backsliding to the historically high levels of trade-distorting support that prevailed during the late 1980s.

As countries shift an ever greater share of their subsidies towards the green box, it becomes increasingly important to establish watertight criteria for these programmes in order to ensure that countries do not notify as “green” payments those that in fact distort production and trade. A renewed attention to the role of direct payments—in particular decoupled income support payments—and the design of environmental programmes is important in this respect.

Mitigating the negative impact of price volatility, especially for developing country commodity producers, is an issue that has been discussed extensively over the last 30 to 40 years. However, in a new era of high global prices and low government stockpiles, it has acquired a new urgency and wider public appeal. Some favour a supply management approach to this challenge—e.g. stockpiling and international price stabilization mechanisms such as the STABEX (Système de Stabilisation des Recettes d’Exportation), the European Communities’ compensatory finance scheme to stabilize export earnings of the African, Caribbean and Pacific countries, used in the period 1975-2000. Others, however, point to the failures of this approach in the past and advocate instead a variety of market-based solutions to

the problem (i.e. essentially opening markets to generate efficient use of resources).

In the context of trade, one potential focus would be to assess how trade-related development assistance affects recipients' vulnerability to climate change—how particular trade facilitation financing efforts might build or reduce adaptive capacity. The WTO's two-year old "Aid for Trade" initiative offers one potential vehicle to put this into practice. Conceptually, the basis of the initiative—the notion that donor countries should help equip poor ones so that they can maximize the potential benefits of trade liberalization—is comparable to the United Nations Framework Convention on Climate Change's call for industrialized nations to help developing countries reduce their vulnerability to climate change.

Adapting to climate change in the agricultural sector will require new technologies, in addition to traditional practices.<sup>17</sup> Anthony Okon Nyong, a Nigerian academic who studies this area, has stated that over the long-term, building resilience to climate change in the farming sector will involve both "soft" technologies such as information systems (including better weather monitoring) or management practices, and "hard" technologies like equipment for irrigation, conservation tillage, new crop varieties (that could be for instance drought-resistant) and integrated drainage systems.<sup>18</sup> Long-term planning must be paired with short-term adaptation, which could potentially entail farm-level responses such as crop diversification, changed planting dates or modifying practices

to fit a shorter growing season. It should also involve financial mechanisms designed to help cope with climate risk, such as agricultural insurance adapted to incorporate climate change-related considerations (which could offer price incentives for farmers to follow practices that might minimize losses). At the same time, better cropland management could help mitigate some greenhouse gas emissions that result from agricultural production itself.

More analysis is necessary about how farm trade patterns might be affected by climate change, and where it might be wise to invest in ramped-up production or support diversification out of agriculture. Projections, of course, have their limits: they are based on incompletely understood, complex relationships and assumptions that may ultimately prove unfounded. Furthermore, not only are future emission levels uncertain, but the climate system's own response might surprise us (maybe unpleasantly).

Nevertheless, in a paper on climate change and agriculture, the Overseas Development Institute concluded that the most favourable scenario for future trade—in poverty reduction terms—would rest on boosting labour-intensive agricultural exports (as opposed to capital-intensive production alone).<sup>19</sup> It called for an "early and marked shift in public support to research and development, extension, market development, rural infrastructure, and services so as to specifically, but not exclusively, benefit directly smaller farmers able to produce for export".<sup>20</sup>

## 5. Conclusions

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Responding to the impacts of climate change in the agricultural sector will be essential for achieving the MDGs, and advancing sustainable development goals in many parts of the world. Countries that already

face tremendous challenges in ensuring food security, maintaining employment opportunities in rural areas and fostering stable export revenues are among those most exposed to the impacts of climate change. While solutions

are being contemplated within the climate regime, policymakers seeking to advance the adaptation agenda should consider exploring further the potential of trade policies: in particular, they ought to examine carefully potential flexibilities for vulnerable economies, options for the reform of harmful subsidies and support mechanisms on the supply side. At the same time, policymakers could also seek to foster institutional synergies between the trade and climate regimes on agriculture, as a means to ensuring that the two issues are central in both policy areas.

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## Endnotes

<sup>1</sup>This article is based in part on ICTSD (2008). *Climate Change and Trade on the Road to Copenhagen: Policy Discussion Paper*, International Centre for Trade and Sustainable Development, Geneva.

<sup>2</sup>LDCs are countries which according to the United Nations exhibit the lowest indicators of socioeconomic development, with the lowest Human Development Index ratings of all countries in the world. A country is classified as a Least Developed Country if it meets three criteria based on: (1) low-income, (2) human resource weakness and (3) economic vulnerability. See <http://www.un.org/special-rep/ohrls/lcd/lcd%20criteria.htm>.

<sup>3</sup>The SVE group comprises SIDS members plus a number of LDCs. Many small economies face specific challenges in their participation in world trade. For example, they lack economies of scale, have limited natural and human resources and face high transport costs for their exports. Some studies show that a small size may limit an economy's possibilities to diversify local production and that this, in turn, could make it more difficult for small economies to fully integrate into the multilateral trading system. The Doha Declaration mandates, in its paragraph 35, the General Council to examine the problems faced by small and vulnerable economies and to make recommendations to improve the integration of such economies into the multilateral trading system. This is to be done, however, without creating a new or separate sub-category of WTO members. The December 2008 draft "modalities" text from the chair of the agriculture negotiations incorporates flexibilities for small, vulnerable economies in a number of different negotiating areas.

<sup>4</sup>SIDS are small island and low-lying coastal countries that share similar sustainable development challenges, including small populations, lack of resources, remoteness, susceptibility to natural disasters, excessive dependence on international trade and vulnerability to global developments. In addition, they suffer from lack of economies of scale, high transportation and communication costs, and costly public administration and infrastructure. At present, fifty-one small island developing States and territories are included in the list used by the United Nations Department of Economic and Social Affairs. These States and territories often work together through the Alliance of Small Island States. See <http://www.sidsnet.org>.

<sup>5</sup>See ICTSD (2007). *Climate, Equity and Global Trade*. (Trade and Sustainable Energy Series Issue Paper No. 2). International Centre for Trade and Sustainable Development, Geneva; and ICTSD (2008), *supra* note 1.

<sup>6</sup>For example, UNCTAD's Least Developed Countries Report 2004 indicates that "most of the LDCs now have more open trade regimes than other developing countries, and the trade regimes of the LDCs as a group are as open as those of high-income OECD countries". See <http://www.unctad.org/Templates/Webflyer.asp?intItemID=1397&docID=4810>.

<sup>7</sup>ICTSD (forthcoming). *Trade, Climate Change and Sustainable Development: Key Issues for Developing Countries*. International Centre for Trade and Sustainable Development, Geneva.

<sup>8</sup>See Boko, M., Niang, I., Nyong, A., Vogel, C., Githeko, A., Medany, M., Osman-Elasha, B., Tabo, R. and Yanda, P. (2007). *Africa. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.). Cambridge University Press, Cambridge, pp. 433-467; and IPCC (2007). *Climate Change 2007: Synthesis Report. Summary for Policymakers*. Cambridge University Press, Cambridge.

<sup>9</sup>See *ibid.*

<sup>10</sup>Cline, W. R. (2007). *Global Warming and Agriculture: Impact Estimates by Country*. Peterson Institute, Washington, D.C.

<sup>11</sup>Klein, R.J.T., Huq, S., Denton, F., Downing, T.E., Richels, R.G., Robinson, J.B. and Toth, F.L. (2007). *Inter-relationships between adaptation and mitigation. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, (eds.), Cambridge University Press, Cambridge, UK, 745-777.

<sup>12</sup>McGray, H., Hammill, A., Bradley, R., Schipper, E.L. and Parry, J.E. (2007). *Weathering the Storm. Options for Framing Adaptation and Development*. World Resources Institute, Washington, D.C.

<sup>13</sup>Witoelar, R., The Bali Road Map: Closing statement by the President of the COP. See [http://unfccc.int/files/meetings/cop\\_13/application/pdf/close\\_stat\\_cop13\\_president.pdf](http://unfccc.int/files/meetings/cop_13/application/pdf/close_stat_cop13_president.pdf).

<sup>14</sup>Lamy, P. (2007). "Doha Could Deliver Double Win-win for Environment and Trade", Speech delivered to the Informal Trade Ministers' Dialogue on Climate Change in Bali, 8-9 December 2007. Available at [http://www.wto.org/english/news\\_e/sppl\\_e/sppl83\\_e.htm](http://www.wto.org/english/news_e/sppl_e/sppl83_e.htm).

<sup>15</sup>ICTSD, *supra* note 7.

<sup>16</sup>The "green box" is defined in Annex 2 of the WTO Agreement on Agriculture. In order to qualify, green box subsidies must not distort trade, or at most cause minimal distortion. They have to be government-funded and must not involve price support. They tend to be programmes that are not targeted at particular products, and include direct income support for farmers that are not related to current production levels or prices. They also include environmental protection and regional development programmes. Green box subsidies are therefore allowed without limits, provided they comply with the policy-specific criteria outlined above. For more information, see [http://www.wto.org/english/tratop\\_e/agric\\_e/agboxes\\_e.htm](http://www.wto.org/english/tratop_e/agric_e/agboxes_e.htm).

<sup>17</sup>UNFCCC Subsidiary Body for Scientific and Technological Advice (2006). *Synthesis Report on Technology Needs Identified by Parties Not Included in Annex I to the Convention*.

<sup>18</sup>Boko et al., *supra* note 8.

<sup>19</sup>Slater, R., Peskett, L., Ludi, E. and Brown, D. (2007). *Climate Change, Agricultural Policy and Poverty Reduction – How Much Do We Know? Natural Resource Perspectives* 109.

<sup>20</sup>*Ibid.*, p. 4.

# Searching for Docking Points: Prospects for Issue-Linking between the World Trade Organization and the United Nations Climate Regime

Fariborz Zelli

## 1. Introduction

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This article is based on research conducted for the EU-funded ADAM project (“Adaptation and Mitigation Strategies: Supporting European Climate Policy”). In particular, it builds on the finding that institutional divergence regarding climate change is increasing and further coordination across international institutions is needed. The overlap in focus between the United Nations climate regime and the World Trade Organization (WTO) constitutes one opportunity for such coordination. The failure to previously seize this opportunity is in part

due to the constellation of strategic interests among country coalitions. I therefore argue that one possible step to tackle the coordination gap among both regimes could be through issue-linking—identifying areas of mutual interest from related debates and considering options for more integrated strategies or even package deals. After presenting the rationale for issue-linking, I sketch some suggestions for potential docking points (i.e. points of critical overlap) across regimes.

## 2. The rationale for issue-linking across the United Nations climate regime and the World Trade Organization

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Approaches to manage the overlap between both the climate and trade regimes have so far largely taken place under the umbrella of the WTO, namely in the Committee on Trade and Environment (CTE) and its Special Session (CTE-SS). These debates have faltered because of either narrow mandates that fail to address climate change issues directly or a lack of common ground among major country groups.<sup>1</sup>

These negotiation stalemates have detrimental effects on both regimes, especially due to the lack of legal clarity. Scholars have argued that the shadow of WTO law and its stronger dispute settlement system may provoke anticipative or “chill effects”.<sup>2</sup> In other words, in order not to risk any legal challenge before the WTO dispute settlement mechanism, Parties

to the United Nations climate regime might refrain from the elaboration or implementation of more ambitious trade-relevant climate protection measures.<sup>3</sup> Likewise, the inability to overcome the current impasse within the CTE-SS debates is not helpful for the further development of the multilateral trading system either given that the Doha Round is a single undertaking for which every agenda item needs to be resolved.

Identification of opportunities for managing the overlap between the trade and climate negotiations could hence prove beneficial for both sides. In order to be more successful, however, such efforts must take into account the underlying reasons for previous shortcomings (e.g. the constellation of strategic interests). Moreover, delegates involved in the

negotiations must be convinced of the utility of further exploring opportunities for issue-linking in a more compelling manner than has so far been the case. Ideally, such efforts could result in proposals for coordination, side-payments or even induce package deals.<sup>4</sup>

What sounds utopian at first glance has been regular practice in international politics in general and international trade in particular (ultimately in the form of the WTO itself, which links a wide range of issues), and has even found its way into recommendations of reports by the Intergovernmental Panel on Climate Change (IPCC).<sup>5</sup>

The most noteworthy example of a constructed link among climate and trade interests was the Russian ratification of the Kyoto Protocol in early November 2004, which secured the Protocol's entry into force 90 days later. With this step, Russian President Vladimir Putin followed recurring requests by European Union member countries that made their support for Russia's WTO accession contingent upon Moscow's ratification of the Kyoto Protocol.<sup>6</sup>

This notwithstanding, issue-linkages or package deals are far from being a panacea. While the potential number of tactical issue-linkages between climate and trade issues is infinite, most of these linkages are neither feasible nor sensible. First of all, both post-2012 climate and Doha negotiations are already overburdened with agenda items, which have often been blamed for the slow progress.<sup>7</sup> Simply bringing in additional topics could easily make matters worse. The choice of topics, therefore, needs to guarantee balanced benefits for all countries. In the WTO negotiations it is not surprising that trade topics tend to be of higher importance

than climate concerns. Yet while climate or energy-related topics might not provide full-fledged bargaining chips, they might help tip the balance within those trade negotiations that are close to agreement.

Furthermore, linking issues raises delicate questions about institutional mandates and jurisdictional clout. Even the IPCC Third Assessment Report contains a direct reference to this problem by questioning whether the WTO CTE is the "appropriate forum to resolve these questions [of trade measures for environmental purposes]".<sup>8</sup> The choice of

forum where such linkages are first discussed needs to accommodate such concerns. Given this, a "neutral" forum with fewer participants might be most suitable for reaching

first informal agreement.

Bearing these caveats in mind, there are nonetheless good reasons for considering further docking points, or points of strategic overlap, among debates. These points of overlap can be roughly divided into two dimensions:

1. material interlinkages: climate change and climate policy affecting trade (e.g. reduced harvests leading to lower exports of agricultural goods) and trade liberalization affecting climate change (e.g. increasing transport leading to more greenhouse gas (GHG) emissions); and
2. institutional interlinkages from overlapping mandates (e.g. increasing the transfer of climate-friendly goods and services).<sup>9</sup>

***"The shadow of WTO law and its stronger dispute settlement system may provoke anticipative or 'chill effects'"***



### 3. Suggestions for issue-linking

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Given the various overlapping topics among the United Nations climate change regime and the WTO, there are several areas where the bargaining potential has not been explored entirely. Two possibilities analysed in greater detail below are:

1. dovetailing country strategies on the transfer of climate-friendly technologies, intellectual property rights (IPRs), plant genetic resources and specific trade obligations in multilateral environmental agreements (MEAs); and
2. linking strategies or discussions on farm subsidies, biofuels and transfer of environmental goods and services (EGS), including climate-friendly ones.

The first option takes into account discussions both in the WTO and the United Nations climate regime, while the second one concentrates on different WTO internal debates.

#### **3.1 Linking strategies on technology transfer, intellectual property rights and specific trade obligations**

Paragraph 31(i) of the Doha Ministerial Declaration (DMD) gives the WTO a mandate to clarify “the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements”. In the CTE-SS discussion under this paragraph, the European Union and Switzerland made several proposals for further legal concessions under the WTO in favour of such specific trade obligations (STOs). For instance, both an interpretative statement on the relationship between WTO law and MEA STOs or an extension of general exceptions under the General Agreement on Tariffs and Trade (GATT) Article XX have been suggested. The United States, Australia and the bulk of developing

countries have been opposed to any such efforts—the latter in particular, since they see such exceptions as a back door for green protectionism.<sup>10</sup>

Yet, on the other hand, in a different WTO debate developing countries have acted as the *demandeurs* for strengthening an MEA. At the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Council, many developing countries (e.g. Brazil, India and the African Group) proposed amending the TRIPS Agreement to reflect requirements of the Convention on Biological Diversity, and in particular those relating to access and benefit-sharing of plant genetic resources. Such an amendment could, for instance, require the disclosure of the origin of genetic material in order to protect national sovereignty over respective resources. This idea has in part been supported by the European Union, which signals yet another inconsistency involving positions on IPRs.

While supporting disclosure of origin in the WTO, the European Union has pursued further endorsement of the TRIPS approach on genetic resources by advocating private ownership—rather than national sovereignty—through strengthened IPR regimes. The European Union and the United States have both negotiated “TRIPS plus” provisions in bilateral agreements with various countries, which advanced such IPR systems. The IPR debate was also carried into the CTE-SS, namely into discussions on EGS under DMD paragraph 31(iii). There, Saudi Arabia suggested allowing compulsory licences for climate-friendly technologies; under such licences, developing country governments could force patent holders to grant use of technologies to third parties.

Moreover, at the 14th Conference of the Parties (COP) to the United Nations



Framework Convention on Climate Change (UNFCCC) in Poznan, Poland in December 2008, some developing countries, including India and Pakistan, called for a relaxation of IPR standards for all climate-related technologies. They argued that such standards render the acquisition of technologies more costly. However, concerned about relative losses for their patent holding companies, industrialized countries rejected such an idea, holding that IPR systems protect innovators and may therefore induce technological development.<sup>11</sup> This debate continued during UNFCCC talks in April 2009 in the “contact group on delivering on technology and financing”. The G-77 and China group supported the idea of IPR relaxations with some developing countries even demanding an IPR partnership regime while the Japanese delegation called for an advisory group to clarify the issue. Given this standoff between industrialized and developing countries, the IPR issue is very likely to persist in future UNFCCC negotiations on technology up to the UNFCCC COP meeting in Copenhagen in December 2009 and beyond.

In summary, there are four related negotiation tracks stuck in a virtual stalemate where country positions are not entirely consistent across debates—with both industrialized countries and developing countries calling for relaxations of WTO rules in different contexts: three debates in the WTO itself (on GATT exceptions, TRIPS relaxations for plant genetic resources and TRIPS relaxations for EGS) and one debate in the United Nations climate regime (on TRIPS relaxations for climate-friendly technologies).

Hence, these represent docking points that signal a potential for countries and negotiators to integrate their strategies. For instance, the European Union could signal its willingness

to consider certain TRIPS relaxations if, in return, developing countries reconsidered their reluctance to broadening general exceptions under GATT Article XX.<sup>12</sup> Naturally, the exact design of this package would depend on further factors, such as the position of other key delegations (e.g. the United States and China), but the opportunity for further exploration certainly exists.

**“Given this standoff between industrialized and developing countries, the IPR issue is very likely to persist in future UNFCCC negotiations on technology”**

### **3.2 Linking strategies on environmental goods and services, farm subsidies and biofuels**

A second option for issue-linking concerns different ongoing WTO negotiations, which are by definition linked given the decision to pursue the entire DMD negotiating agenda as a “single undertaking”. In other words, progress on the “trade and environment” mandate of the Doha Round depends on the success of talks on other Doha items, especially on tariff and subsidy cuts in the industrial goods and agriculture negotiations, and no final agreement can be reached until there is agreement on all aspects of the WTO DMD negotiations.

In the EGS discussions under DMD paragraph 31(iii), the United States, the European Union and other developed countries have supported a “list approach” identifying specific environmental goods for tariff reduction. Most developing countries, in turn, have argued that the “list approach” is just a disguise for granting industrial goods with multiple uses wide-ranging access to their markets.<sup>13</sup>

A different debate, and one of the fundamental controversies of the Doha Round, regards the question of farm subsidies. In this debate, however, developing countries are *demandeurs* themselves, proposing that

the United States and the European Union liberalize their agricultural trade policies and reduce agricultural subsidies to allow more imports from developing countries.

Finally, the question of biofuels directly relates to both discussions as the topic falls in both agriculture and climate policy fields. For instance, Brazil and other countries have criticized that the lists of goods presented by the European Union and the United States for trade liberalization do not include biofuels. Moreover, Brazil has included US subsidies of ethanol-based biofuels in a WTO dispute it filed against US agricultural subsidies in July 2007.<sup>14</sup> The lack of internationally agreed criteria for sustainable biofuels production and the uncertainty on the legal status of biofuels equally concern the farm subsidies debate. Thus far, fuels made from crops, such as ethanol, are classified as agricultural goods (by the World Customs Organization), while biodiesel is considered to be an industrial product.<sup>15</sup> Given this, biofuels are discussed at different ends of

the Doha debate on farm subsidies and non-agricultural goods.

In summary, Northern and Southern countries have both acted as *demandeurs* for trade liberalization in different parts of the Doha debate.<sup>16</sup> No doubt discussions on farm subsidies are more important to the bulk of involved countries than the EGS debate. This notwithstanding, a better coordination of positions—for example, in terms of concessions from one camp on the question of EGS or biofuels (e.g. an “extended list approach”)—might help trigger advances in overall farm subsidy talks or at least partly bridge the remaining gap. Such a concession might, for instance, allow for the inclusion of biofuels that fulfil certain sustainability criteria as an EGS slated for liberalization. The consideration of sustainable biofuels would accommodate the interests of some developing countries and thus raise the chance of a more comprehensive deal on other EGS trade barrier removals.

## 4. Conclusions

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The intention of this article is to consider the potential for issue-linking within and across the climate and trade negotiations. Two opportunities for issue-linking were explored in greater detail but the exact nature of how a package deal regarding these issues could be developed depends largely on the course of negotiations and windows of opportunity for cross-issue bargaining. Unfortunately, these issues cannot be anticipated in every detail.

By the same token, the suggested “docking points” are by no means the only possibilities for issue-linking in the realm of climate and trade overlaps. First of all, some of their elements might be combined in different ways.<sup>17</sup> Second, integrated country strategies are not the only way to link issues. Experts

have come up with varied suggestions with different levels of abstraction, ambition, and institutional setting. Early and very ambitious proposals, for instance, considered linking climate change strategies to debates on international debt.<sup>18</sup> Regarding institutional design on a deal on climate-friendly goods and services, a study by the World Bank has recently suggested a plurilateral agreement “independent of the conclusion of the Doha negotiations”.<sup>19</sup> Likewise, Thomas Brewer’s article in this publication suggests that sectoral agreements may offer opportunities to coordinate climate and trade policies.

The next months—highly critical for the further evolution of both regimes—will tell to what extent policymakers can use the potential for

these or other areas of issue-linking to leverage stalled negotiations and to avoid detrimental effects on further regime development.

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## Endnotes

<sup>1</sup> I illustrate the difference of positions when describing possible issue linkages in section 3.

<sup>2</sup> Eckersley, R. (2004). The Big Chill: The WTO and Multilateral Environmental Agreements, *Global Environmental Politics* 4, 24-40.

<sup>3</sup> Oberthür, S. (2006). The Climate Change Regime: Interactions with ICAO, IMO, and the EU Burden-Sharing Agreement. In Oberthür, S. and Gehring, T. (eds.). *Institutional Interaction in Global Environmental Governance: Synergy and Conflict among International and EU Policies*. MIT Press, Cambridge, MA, pp. 53-78, p. 57.

<sup>4</sup> The underlying intuition of tactical issue linkage—or even package deals—is that they can solve asymmetries among countries, each country gaining on a different issue, thereby making the agreement profitable to all participants. See Cesar, H.S.J. and de Zeeuw, A.J. (1996). Issue Linkage in Global Environmental Problems. In Xepapadeas, A. (ed.). *Economic Policy for the Environment and Natural Resources*. Edward Elgar, Cheltenham. In terms of game theory, such tactical issue-linkage can connect two separate bargaining situations, creating a new pay-off matrix with altered preferences, i.e. an overall constellation which is more conducive to cooperation. Combining climate and trade issues in an overall deal might hence produce new bargaining chips and provide new leverage to deadlocked negotiations. See Zürn, M. (1990). Intra-German Trade: An Early East-West Regime. In Rittberger, V. (ed.). *International Regimes in East-West Politics*. Pinter, London, pp. 151-188.

<sup>5</sup> IPCC (2001). *Climate Change 2001: Mitigation. Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. B. Metz, O. Davidson, R. Swart and J. Pan (eds.), Cambridge University Press, Cambridge, United Kingdom, pp. 624-627.

<sup>6</sup> See Henry, L.A. and Sundstrom, L. (2007). Russia and the Kyoto Protocol: Seeking an Alignment of Interests and Image, *Global Environmental Politics* 7, 47-69.

<sup>7</sup> International Institute for Trade and Sustainable Development (2008). Doha: Close, but Not Enough. *Bridges Weekly Trade News Digest* 12:27. Available at <http://ictsd.net/i/news/bridgesweekly/18040/>.

<sup>8</sup> IPCC, supra note 5, p. 435.

<sup>9</sup> See e.g., Asselt, H. van and Biermann, F. (2007). European Emissions Trading and the International Competitiveness of Energy-Intensive Industries: a Legal and Political Evaluation of Possible Supporting Measures, *Energy Policy* 35, 497-506; Brewer, T.L. (2004). The WTO and the Kyoto Protocol: Interaction Issues, *Climate Policy* 4, 3-12.

<sup>10</sup> Thomas, U.P. (2004). Trade and the Environment: Stuck in a Political Impasse at the WTO after the Doha and Cancún Ministerial Conferences, *Global Environmental Politics* 4, 9-21, pp. 17-18.

<sup>11</sup> Meyer-Ohlendorf, N. and Gerstetter, C. (2009). *Trade and Climate Change. Triggers or Barriers for Climate Friendly Technology Transfer and Development*. Dialogue on Globalization – Occasional Paper No. 41 / February 2009. Ecologic, Berlin, pp. 23-26. Experts equally disagree whether, on balance, an easing of IPR systems might help or hinder the transfer of climate-friendly technologies. See Barton, J.H. (2007). *Intellectual Property and Access to Clean Energy Technologies in Developing Countries*. ICTSD Issue Paper No. 2. International Centre for Trade and Sustainable Development, Geneva; Littleton, M. (2008). *The TRIPS Agreement and Transfer of Climate-Change-Related Technologies to Developing Countries*. DESA Working Paper No. 71. United Nations, New York. Available at [http://www.un.org/esa/desa/papers/2008/wp71\\_2008.pdf](http://www.un.org/esa/desa/papers/2008/wp71_2008.pdf).

<sup>12</sup> Switzerland and some EU countries have already demonstrated that some form of issue-linkage with regard to TRIPS discussions is possible. In order to reach a package deal, they suggested linking their demand for an extension of provisions on geographical indication to the proposal on a TRIPS amendment on disclosure (as required by developing countries). See Palmer, A. and Tarasofsky, R. (2007). *The Doha Round and Beyond: Towards a Lasting Relationship between the WTO and the International Environmental Regime*. Chatham House Report. Royal Institute of International Affairs, London, pp. 43-44. Available at [http://www.chathamhouse.org.uk/files/3397\\_wtomea0207.pdf](http://www.chathamhouse.org.uk/files/3397_wtomea0207.pdf).

<sup>13</sup> One example for a dual-use good is a pipe, which can be used as an input to a renewable energy plant, but could as well be used to transport oil. See World Bank (2008). *International Trade and Climate Change. Economic, Legal, and Institutional Perspectives*. World Bank, Washington, D.C.; Jha, V. (2008). *Environmental Priorities and Trade Policies for Environmental Goods: A Reality Check*. ICTSD Issue Paper No. 7. International Centre for Trade and Sustainable Development, Geneva, pp. 2-5. Available at [http://ictsd.net/downloads/2008/09/veena-jha\\_webpost.pdf](http://ictsd.net/downloads/2008/09/veena-jha_webpost.pdf).

<sup>14</sup> *United States - Domestic Support and Export Credit Guarantees for Agricultural Products*, Request for the Establishment of a Panel by Brazil, WT/DS365/13, 9 November 2007. See also Brewer, T.L. (2008). *Climate Change Policies and Trade Policies: The New Joint Agenda*. Background paper for UNEP Expert Meeting – Geneva – February 2008, pp. 12, 24.

<sup>15</sup> Abdel Motaal, D. (2008). The Biofuels Landscape: Is There a Role for the WTO?, *Journal of World Trade* 42, 61-86.

<sup>16</sup> Brewer, T.L. (2006). *Climate Change Technology Transfer in the U.S. Energy Policy Act of 2005: The Institutional Context for an Expansion of the Climate Change Agenda of Government and Business*, p. 12. Available at <http://www.usclimatechange.com/downloads.php/Brewer%2520Corrected%2520New%2520%2523F9E20..pdf>.

<sup>17</sup> Palmer and Tarasofsky make such a suggestion with regard to the aforementioned debate on exemptions for MEAs under WTO law (para. 31(i)): "Were the EC to agree to concession on agriculture, it might therefore seek to exact, as a price, concessions from others on 31(j). The EC's latest submission on WTO-MEAs may signal its willingness to accept a procedurally-based outcome on the issue, rather than a more fundamental normative shift." See Palmer and Tarasofsky, supra note 12, p. 42.

<sup>18</sup> Mohr, E. (1995). International Environmental Permits Trade and Debt: The Consequences of Country Sovereignty and Cross Default Policies, *Review of International Economics* 3, 1-19.

<sup>19</sup> World Bank (2008). *International Trade and Climate Change. Economic, Legal, and Institutional Perspectives*. World Bank, Washington, D.C., p. 92.

# PART II: Regional and Bilateral Measures – Can Less Be More?

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## Harnessing Regional Trade Agreements for the Post-2012 Climate Change Regime

Joy A. Kim

### 1. Why regional trade agreements and why include environmental provisions in them?

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In 2005-2006, the Organization for Economic Co-operation and Development (OECD) first undertook an in-depth analysis of the ways in which governments deal with environmental issues in the context of regional trade agreements (RTAs), based on the understanding that RTAs can have a positive influence on framing trade and environment discussions at the global level in the context of the World Trade Organization (WTO).<sup>1</sup> In fact, this has

*“RTAs allow a small group of countries to negotiate rules and commitments that go beyond what is often possible at the multilateral level”*

been evidenced in the past, as a number of areas including services, intellectual property, environment, investment and competition policies were negotiated first at the regional level, and later brought to the WTO.

WTO rules allow for the possibility of regional integration and bilateral agreements for members who wish to liberalize at a quicker pace. Indeed, RTAs allow a small group of countries to negotiate rules and commitments that go beyond what is often possible at the multilateral level.

Over the past few years, the number of RTAs has significantly increased and is expected to reach 400 if the RTAs currently under negotiation are concluded.<sup>2</sup> They have

become so widespread that practically all WTO members are now Parties to one or more of them.

Why are countries pursuing RTAs? The continuous stalemate of WTO negotiations and ensuing frustrations may be one reason. In a broader sense, however, such a phenomenon is a manifestation that when it comes to contentious global issues, forging a regional consensus

first can be instrumental.<sup>3</sup> In fact, the merit of regional forums is often underestimated. However, greater use of regional approaches could open additional avenues to advance negotiations, since it would mean that an increasing number of forums will be available for countries to pursue their agendas and interact. This may allow them to surmount political obstacles that impede the negotiations. In addition, regional forums can provide countries with an opportunity to coordinate their positions and reach consensus among themselves before they move to the multilateral arena.<sup>4</sup>

RTAs negotiated by most OECD countries include some type of environmental provisions. Among OECD members, Canada,

the European Union, New Zealand and the United States have included the most comprehensive environmental provisions in recent RTAs. Among non-OECD countries, Chile has also included comprehensive environmental provisions in its RTAs.

Why do most OECD countries include environmental provisions in RTAs? The answer follows from the merits and advantages of pursuing a regional approach in advancing difficult multilateral negotiations discussed above. Some countries consider inclusion of environmental provisions in RTAs as a chance to pursue environmental objectives in a more efficient way than through multilateral environmental agreements (MEAs). Negotiations of RTAs often provide an opportunity to obtain concessions in other, related fields that would otherwise be difficult to achieve. On the other hand, many others are wary of incorporating trade and environment provisions in RTAs for fear

of prejudicing their multilateral positions. Some others fear that strong environmental enforcement mechanisms will be used to create new barriers for their exports to RTA partner markets.

The scope and depth of environmental provisions in RTAs varies. The most ambitious approaches take the form of a comprehensive environmental chapter or an environmental side agreement, or both. Examples include the North American Free Trade Agreement (NAFTA) and all RTAs subsequently negotiated by the United States with Singapore, Chile, Australia, Bahrain and Morocco, as well as with the five Central American countries and the Dominican Republic. Some other RTAs take the approach of minimum coverage of environmental issues in the form of exception clauses to general trade obligations under the agreements.<sup>5</sup>

## 2. Implications of regional trade agreements for the post-2012 climate regime

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Achieving ambitious climate change targets at minimum cost requires engaging all major emitters, both countries and sectors. However, the uneven distribution of mitigation costs and capacities across regions hampers a wide participation of countries. With the implementation of binding emissions targets in some parts of the world and not in others, emissions reduced in one region could be partly offset by emissions increased elsewhere. Trade-exposed and energy-intensive activities in the carbon-constrained economies might face competitiveness distortions coming from the lack of similar efforts elsewhere. The key to successfully designing a post-2012 climate change regime, therefore, would be devising an equitable burden sharing mechanism

through financing and technology transfer, while addressing competitiveness and carbon leakage concerns.

One rapidly emerging approach is an international sector-based arrangement, which might open an avenue to engage major developing country economies early on and address leakage concerns if well-designed. For instance, if emissions leakage is only likely to occur in a few large energy-intensive sectors in relatively few countries, a government-led sectoral agreement could improve the effectiveness of reducing greenhouse gases (GHGs), complementing an international agreement including national emissions targets.<sup>6</sup>



Sectoral approaches could also facilitate the diffusion of sector-specific technologies by setting a target for technology transfer and addressing trade barriers facing them. In particular, a sector-based Clean Development Mechanism (CDM) could further promote financial and technology transfer by scaling up the project-based mechanism. One possible scenario would be that under a no-lose target carbon credits could be granted to those companies that exceed a baseline performance.<sup>7</sup>

Implementing a sector-specific CDM with sectoral crediting mechanisms would require substantial technical assistance for developing countries though, as they have to be equipped to implement such sector-wide policies and to monitor, report and verify performance. The operationalization of a sectoral approach will also have to overcome many practical challenges such as data collection and benchmark or baseline setting. Given that many small and medium-sized enterprises (SMEs) are operating in the energy-intensive industries in developing countries, capacity building for them would be essential. More importantly, it should be borne in mind that there will be an opportunity cost in employing a sectoral approach as the benefits of cross-sector permit trading will be lost. Thus, such sectoral approaches might be best considered as a transitional approach in energy-intensive, trade-exposed industries during the absence of national emission targets for all major emitters.<sup>8</sup>

Several other policy options to facilitate technology transfer could also be explored to provide incentives for wide participation of countries. These options include lowering trade barriers to globally traded commercial mitigation technologies and harnessing foreign direct investment (FDI) to foster the flow of clean technologies and knowledge across borders if well targeted at clean technologies, such as renewable technologies, instead of

conventional ones, such as fossil fuel-based power plants.

How could the rapidly increasing number of RTAs contribute to devising an equitable burden sharing mechanism with all major emitters engaged while addressing the competitiveness and carbon leakage concerns in the post-2012 period? The most direct channel is facilitating the diffusion of sector-specific technologies, addressing trade barriers to the technologies, and providing capacity building required for the efficient implementation of a sectoral approach or sector-based CDM. If countries' positions are so divergent that regional cooperation is hard to garner, bilateral channels should be sought in support of the regional channel. Such bilateral channels of dialogue already exist in some RTAs to allow for environmental cooperation between the Parties. So long as both Parties have common interests, they can expand such cooperation activities to the sectoral level. Eventually, such bilateral channels of cooperation in the region should converge with regional-level cooperation in order to ensure policy coherence.

The following sections will provide an overview of various tools embedded in RTAs to address environmental concerns and explore how some of these tools might be used to contribute to shaping the post-2012 regime.

### ***2.1 Multiple tools to address environmental concerns in regional trade agreements<sup>9</sup>***

Countries attempt to address environmental concerns in RTAs by using multiple tools. One such tool is environmental impact assessment to anticipate and manage impacts associated with the increase in trade volume. The findings of such assessments have resulted in capacity building for environmental management or increased cooperation. Another tool is the setting of environmental standards and enforcement of environmental laws in RTAs.<sup>10</sup>

The agreements between Canada and Costa Rica, and Canada and Chile, for instance, reinforce Parties' commitment to maintain high levels of environmental protection. Agreements signed by New Zealand include references to the inappropriateness of lowering environmental standards.

RTAs providing for binding obligations related to enforcement of environmental laws also contain mechanisms to ensure these obligations are fulfilled. Additionally, practically all RTAs allow derogations to the obligations under the agreement for the protection of health, the conservation of natural resources, or the protection of the environment, and many of them are modelled after Article XX (the general exceptions) of the General Agreement on Tariffs and Trade (GATT). Finally, governments are increasingly involving the public in the negotiation and implementation of RTAs to address environmental concerns.

Among others, environmental cooperation mechanisms embedded in RTAs provide a broad window of opportunity to address specific environmental concerns such as climate change. Thus, the remainder of this article focuses on how environmental cooperation mechanisms of some RTAs can be further explored to contribute to, for instance, technology transfer in the post-2012 period.

## ***2.2 Some examples of environmental cooperation and capacity building on climate issues within regional trade agreements***

In many RTAs, one of the tools to address environmental issues are environmental cooperation mechanisms. The efforts at environmental cooperation are descendents of cooperation that pre-dates the entry into force of free trade agreements, as countries in the same region often share common environmental concerns. In particular, MEAs such as the United Nations Framework

Convention on Climate Change (UNFCCC) provide the mechanisms for regions to cooperate through implementation measures such as technology transfer and environmental investments. For instance, much effort has been made to curb emissions from China through regional cooperation given that, according to a recent study, China's coal-burning power plants have caused acid rain affecting neighbouring countries.<sup>11</sup>

The scope of cooperation varies; some countries have agreed on broad cooperation agreements, covering a large range of areas; others focus cooperation on specific issues of common interest. One such example is the 2005 agreement between ASEAN Member Countries and Korea under which Parties commit to "pursue... on a mutually agreed basis: cooperation in environmental technologies and policies, such as compressed natural gas technology and policy"<sup>12</sup> (see Box 1).

The area of cooperation also varies. One area that could be further explored in relation to climate change policy is the implementation of commitments under MEAs. While some RTAs refer to MEAs and generally do so in the preamble and provisions on cooperation (e.g. the US-Chile Agreement; the environmental cooperation agreement (ECA) between Canada, Chile and Costa Rica; FTAs between the European Union and Bangladesh, and the European Union and Croatia), others such as MERCOSUR and the Japan-Mexico bilateral trade agreement contain more elaborate provisions on cooperation for the implementation of MEAs. For example, Parties to MERCOSUR have agreed to cooperate in the implementation of environmental agreements to which they are Parties. In the Colombia-Ecuador-Peru-US ECA, Parties agree to work together to strengthen their capacity to implement MEAs and to develop proposals to enhance the work performed under MEAs.



The agreement with the most specific reference to cooperation for the implementation of climate policy is the agreement between Japan and Mexico. It provides a concrete reference to climate change issues, aiming at “promotion of capacity and institutional building to foster activities related to the CDM under the Kyoto Protocol... and exploration of appropriate ways to encourage the implementation of CDM projects”.<sup>13</sup>

### ***Box 1. Examples of cooperation in one area of special interest to the Parties***

- The Agreement between ASEAN Member States and Korea (2005): Parties commit to “pursue... on a mutually agreed basis: cooperation in environmental technologies and policies, such as compressed natural gas technology and policy.”<sup>14</sup>
- The Japan-Thailand Agreement (2007): Parties have agreed to “promote cooperation between the governments of the Parties... such as in the fields of ‘agriculture, forestry and fisheries’ and ‘science, technology, energy and environment’.”<sup>15</sup>
- The Environment Cooperation Agreement between New Zealand and China (2008): “Cooperative activities may be in areas including but not limited to: environmental management, environmental remediation, nature conservation, and technologies for environmental benefit. Examples could include: a) management of water environment; b) coastal ecological conservation and pollution control; c) air pollution control and monitoring; d) improvement of environmental awareness, including environmental education and public participation; e) management and disposal of waste including hazardous waste; f) environmental management of chemicals; g) environment and trade; h) biodiversity conservation.”<sup>16</sup>
- Agreement between Japan and Mexico for the Strengthening of the Economic Partnership (2004): “Cooperative activities under this Article may include:... b) promotion of capacity and institutional building to foster activities related with the CDM under the Kyoto Protocol to the UNFCCC, as may be amended, by means of workshops and dispatch of experts, and exploration of appropriate ways to encourage the implementation of the CDM projects; c) encouragement of trade and dissemination of environmentally sound goods and services.”<sup>17</sup>

Another area of cooperation that is relevant to climate change is the promotion of environmentally-friendly goods and services. While attempts to liberalize trade in environmental goods and services (EGS) at the WTO are at a stalemate, a few key players have been channelling their efforts through RTAs. Liberalizing trade in climate-friendly technologies can contribute to technology transfer by reducing barriers on

the supply side. There is increasing evidence that addressing non-tariff barriers on the demand side, such as diverse standards, costly certification and a lack of appropriate domestic policies, is more important than tariff barriers to ease the diffusion of some climate-friendly technologies.<sup>18</sup> In this regard, efforts by the MERCOSUR Framework Agreement on Environment to harmonize environmental standards can positively contribute to

removing non-tariff barriers to some climate-friendly technologies.

Likewise, the US Trade Act of 2002 explicitly mentions that one of the principal trade negotiating objectives is to seek market access, through the elimination of tariffs and non-tariff barriers, for US environmental technologies, goods and services. US RTAs thus systematically include text related to market access for EGS (e.g. the US-Morocco agreement).

The ECA signed in conjunction with the US-Dominican Republic-Central America Free Trade Agreement provides a comprehensive framework for environmental cooperation between the countries that builds on previous environmental capacity building in the region. Priority areas for cooperation under the ECA include, for example, promoting clean technologies and environmentally-friendly goods and services.

While currently only a few RTAs include a direct reference to climate change-related cooperation activities, there is much room for such activities to be taken up in both existing and upcoming RTAs in a more concrete manner as many RTAs tend to take an open and flexible approach to environmental cooperation. For example, in the Trans-Pacific Strategic Economic Partnership (TPSEP) and the New Zealand Thailand Closer Economic Partnership (NZTCEP), the scope of environmental cooperation is left open in the agreement and is determined during the implementation phase through discussions among environmental officials.

### ***2.3 Implications of environmental cooperation mechanisms in regional trade agreements for the post-2012 regime***

What implications for climate change policy in a post-2012 world can be drawn from these examples of environmental cooperation mechanisms? First, if there is mutual desire among the Parties concerned, environmental cooperation mechanisms can be used to address specific issues such as climate change. As seen above, the scope of cooperation can vary ranging from the implementation of Parties' international environmental commitments, the adoption of common policies for the protection of the environment, the conservation of natural resources, joint communications on subjects of common interest and exchanges of information about national positions in international forums to cooperation on the transfer of specific technologies. The language identifying technologies can be as broad as "environmental" or "clean"

***“Environmental cooperation mechanisms can be targeted at the transfer of certain climate-friendly technologies in which relevant Parties have a common interest”***

technologies or it can be more specific. For instance, the environmental cooperation mechanisms can be targeted at the transfer of certain climate-friendly technologies in which relevant Parties have a common interest, and which might be useful to reduce emissions in energy-intensive sectors.

It is important to understand that cooperation is not one-way. Developed countries can also use the cooperation mechanisms as a way of enhancing their own understanding of critical issues. For example, under the NZTCEP and the TPSEP New Zealand was the beneficiary of a vehicle emissions study tour that engaged experts from Thailand and Singapore on methods to control vehicle emissions, including emission testing technologies, transport management policies and strategies, emission enforcement

programmes, fuel economy labelling and climate change policies.

Second, capacity building between developed and developing partners to facilitate the operationalization of a sectoral approach or the implementation of a sectoral CDM can be envisaged. Possible areas of capacity building could include data collection and establishment of a benchmark or baseline setting at the sectoral level and capacity building for SMEs operating in the energy-intensive industries in developing countries.<sup>19</sup>

Third, while it is a common belief that FDI can enhance competition and foster the flow

of clean technologies and knowledge across borders, the extent to which RTAs can facilitate FDI flows might be limited. Many RTAs refer investment issues to bilateral investment agreements signed by the relevant Parties. The link between increased FDI through RTAs and its impact on clean technology transfer also remains uncertain, as there is still little evidence that increased FDI benefits clean technologies rather than conventional technologies. Therefore, more research is needed to examine which categories of technologies have benefited the most from increased FDI by examining the proportion of investment received in clean technologies versus conventional ones.

### 3. Concluding remarks

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Despite the potential opportunities presented by RTAs in the context of addressing climate change, a number of challenges remain. One challenge is that the RTA regime is still evolving and new. As of today, there are only a few RTAs whose implementation of environmental provisions has been evaluated; in fact, only NAFTA's environmental performance has been properly evaluated at this stage. It still remains to be seen whether environmental cooperation provisions reflected in a number of RTAs have been successfully implemented, and moreover, whether RTAs' potential contribution to tackling climate change will be realized.

In addition, although environmental cooperation mechanisms appear to be widely incorporated in diverse types of RTAs, it is uncertain whether all types of RTAs can incorporate such provisions as it may depend on the nature and the scope of the agreement. Some RTAs aim at establishing free-trade areas, while others seek to establish partnerships or regional integration. More in-depth analysis is required to have a clear understanding of

the types of RTAs and their potential capacity to address specific environmental concerns. In this regard, developing a taxonomy of RTAs based on the way they incorporate environmental provisions, in general, and certain mechanisms to address specific environmental issues such as climate change, in particular, might be useful.

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## Endnotes

<sup>1</sup> For the purpose of this article, the term RTA includes bilateral and regional trade agreements, free trade agreements, economic partnerships and other arrangements aimed at trade liberalization between the parties. The OECD work on Environment and Regional Trade Agreements has been carried out mainly under the auspices of the Joint Working Party on Trade and Environment and has produced the "Environment and RTAs" publication in 2007, which was followed by a "Checklist for Negotiators of Environmental Provisions in RTAs" in 2008. This article heavily borrows information from OECD (2007). *Environment and RTAs*. OECD, Paris.

<sup>2</sup> See OECD (2007), supra note 1.

<sup>3</sup> Kim, J.A. (2007). Advancing the Trade and Environment Agenda: Seeking Regional Cooperation in Northeast Asia. In Najam, A., Halle, M. and Meléndez-Ortiz, R. (eds.). *Envisioning a Sustainable Development Agenda for Trade and Environment*. Palgrave Macmillan, New York, 205-223.

<sup>4</sup> UNU-IAS (2005). *Promoting Enfranchisement: Toward inclusion and influence in sustainable development governance*. (UNU-IAS Report). UNU-IAS, Yokohama.

<sup>5</sup> It is worth noting that the extent to which environmental issues are integrated in RTAs depends primarily on the desire of the Parties to the agreement to do so, but is also related to the nature and the scope of the agreement. Some RTAs seek to establish free-trade areas to foster economic cooperation by reducing tariffs among the parties; others seek to establish partnerships that lay the institutional basis to foster dialogue for better economic relations. Some of the agreements deal comprehensively with regional integration, addressing a broad range of economic, political and social issues. Thus, the environmental components of all these agreements also come in many different forms.

<sup>6</sup> Colombier, M. and Neuhoff, K. (2008). Sectoral Emission Agreements. Can they Address Leakage? *Environmental Policy and Law* 38(3), 161- 166.

<sup>7</sup> "No-lose target" is defined as greenhouse gas emissions reduction target that can be achieved at negative or no direct cost. Sterk, W. and Wittneben, B. (2006). Enhancing the Clean Development Mechanism through Sectoral Approaches: Definitions, Applications and Ways Forward, *International Environmental Agreements: Politics, Law and Economics* 6, 271-287.

<sup>8</sup> IEA (2008). *Sectoral Approaches to Greenhouse Gas Mitigation*. Summary Document of the International Workshop on Sectoral Approaches to International Climate Policy (IEA/SLT(2008)16), 14-15 May 2008.

<sup>9</sup> For more details, see OECD (2007), supra note 1.

<sup>10</sup> Some countries, in recognition that countries maintain their prerogative to determine their own preferred levels of environmental protection, include these in RTAs to ensure that a lack of enforcement of environmental laws or the lowering of environmental standards would not lead to undue competitive advantage.

<sup>11</sup> Morita, T. and Hamada, M. (2004). *Response to Global Warming in Northeast Asia*. Working Paper. Economic Research Institute for Northeast Asia. Available at <http://www.erna.or.jp/en/Ec/Forum2000/eSession2/eMorita.htm>.

<sup>12</sup> Annex of the ASEAN-Korea Framework Agreement, Article 11. Available at <http://www.aseansec.org/18067.htm>.

<sup>13</sup> Agreement between Japan and the United States of Mexico for the Strengthening of the Economic Partnership, Article 147. Available at <http://www.mofa.go.jp/region/latin/mexico/relation0207/index.html>.

<sup>14</sup> Annex of the Framework Agreement on Comprehensive Economic Cooperation Among the Governments of the Member Countries of the Association of Southeast Asian Nations and the Republic of Korea, Article 11. Available at <http://www.aseansec.org/18067.htm>.

<sup>15</sup> Agreement between Japan and the Kingdom of Thailand on an Economic Partnership, Article 153. Available at <http://www.mofa.go.jp/region/asia-paci/thailand/epa0704/agreement.pdf>.

<sup>16</sup> Environment Cooperation Agreement between New Zealand and the People's Republic of China, Article 2. Available at <http://chinafta.govt.nz/1-The-agreement/1-Key-outcomes/0-downloads/ECA-NZ.pdf>.

<sup>17</sup> See supra note 13.

<sup>18</sup> For more information, see Kim, J. and Steenblik, R. (2007). *Facilitating Trade in Selected Climate Change Mitigation Technologies in the Energy Supply, Buildings and Industry Sectors*. OECD, Paris.

<sup>19</sup> While not in the area of climate change, the declaration on a MERCOSUR biodiversity strategy, for example, provides for training and capacity building through exchange programmes, joint training activities and information exchange. For more details, see OECD (2007), supra note 1.

# The Potential of Regional and Bilateral Sectoral Agreements

Thomas L. Brewer

## 1. Purpose and scope

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The purpose of this article is threefold: first, to examine potential elements of the future climate regime with implications for the trading system; second, to discuss approaches through which the trade regime can address or affect climate change; and finally, to explore synergistic interplays between the climate and trade negotiating agendas. The article illustrates general analytic observations by using regional and bilateral cases.

It is likely that the post-2012 international climate regime will include at least the following elements: emissions targets and timetables, with or without binding provisions; emissions trading and/or offset projects, including reform of the Clean Development Mechanism and Joint Implementation project approval processes; provisions on international technology transfer and financing, particularly for transfers from “developed” to “developing” countries; and sectoral agreement(s), perhaps only in the form

of a framework agreement or perhaps in the form of industry-specific agreements for steel and/or cement, for instance.

This article focuses on the trade implications of the third and fourth elements. In other words, “trade” is defined broadly to include investment and technology transfer, as well as sectoral agreements.<sup>1</sup> Specifically, the article offers four paradigms of international technology transfer for climate change mitigation, identifies impediments to them, and discusses how they can be addressed in trade and climate change institutional settings. Regional sectoral agreements are also considered, especially the Asia-Pacific Partnership on Clean Development and Climate (APP), which includes provisions concerning international trade and investment barriers. Finally, the potential for bilateral sectoral agreements, particularly related to aviation, are discussed.

## 2. Technology transfer for climate change mitigation: how to overcome impediments<sup>2</sup>

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When considering international technology transfer for climate change mitigation, it is useful to consider the following four analytic paradigms:

1. North-South transfer and financing;
2. global trade and investment;
3. international public-private research, development and diffusion cooperation; and
4. firms’ intellectual property rights (IPRs), “internalization” and mergers and acquisitions.

Each paradigm is based on assumptions about the nature of international technology transfer, including their origins, forms, impediments, and implications for policy.

The emphasis thus far in the institutional settings of international climate change discussions has been on North-South transfers and financing—the first paradigm. In particular, the key climate change mitigating technologies are assumed to have been, or about to be, developed in the rich industrialized countries of the North. They

are further assumed to be potentially cost-effective for emissions abatement in the less rich countries of the South. However, in order for them to be transferred from the countries of the North to the countries of the South, there must be greater international financial assistance to facilitate the transfers. Although these are appropriate and potentially useful emphases for addressing some policy issues in global international negotiations, as well as in the context of unilateral, bilateral and regional policymaking, they reflect an inappropriately narrow conceptualization of international technology transfer. The agenda should be much more expansive than this paradigm implies, and it should be informed by additional paradigms.

The other three paradigms discussed below expand the dialogue and policy making efforts to increase international technology transfer for climate change mitigation. Furthermore, all three of them have implications for the intersections of trade and climate change issues.

The second paradigm emphasizes the role of international trade and foreign direct investment (FDI) as channels of technology transfer. One way to increase technology transfer is to reduce government barriers to trade and FDI—barriers that exist in virtually all countries, including the developed countries of the North as well as the developing countries of the South. Obvious examples are tariffs and non-tariff barriers on imports of a wide variety of energy efficiency and renewable energy goods. Another, though less publicly conspicuous, type of barrier are government restrictions on FDI projects in the form of trade-balancing requirements; a way to control the net foreign exchange effects of projects. Yet other examples are restrictions on the nationalities of the members of board

of directors or limitations on the percentage of foreign ownership.

The third paradigm emphasizes the market failures in research, development and diffusion, particularly in technologies that require large capital investments and are not likely to become commercially viable for many years, if at all. These are features of several of the climate change mitigating technologies of widespread interest, such as carbon capture and storage. A potential way to overcome this impediment to international technology transfer is to arrange international public-private cooperation agreements such as the APP, which includes provisions for international trade and investment as well as technology transfer among its seven participating countries.

***“There is the possibility of win-win outcomes for agreements that would increase international transfers of climate-friendly technologies”***

The fourth paradigm focuses on a different set of impediments, namely the IPRs of firms, the tendency of firms to “internalize” technologies as a basis of their competitive advantage (i.e. keeping technology to themselves and avoiding externalizing it in markets), and the use of mergers and acquisitions for anti-competitive purposes. While international trade venues have attended to this type of impediments for many years, current climate change negotiations have only started to address the actual implications of IPRs for international technology transfer.

These paradigms suggest the need for a variety of efforts in trade forums to tackle such impediments, including reduction of trade and investment barriers in multilateral, regional and bilateral agreements, and monitoring of IPRs, FDI and mergers and acquisitions.



### 3. Regional sectoral agreements: the Asia-Pacific Partnership on Clean Development and Climate

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The APP was a US government initiative of the Bush administration, whose intention, it has been argued by some, was in part to undermine the multilateral climate regime centred in the United Nations Framework Convention on Climate Change (UNFCCC).<sup>3</sup> The proposal reflected a preference for regional international agreements rather than multilateral agreements; a common theme also reflected in US trade policies for many years. Regardless of purported US intentions, the Japanese government and industry have taken leadership roles under the APP in actively promoting a wide range of projects in seven sectors, including, among others, aluminium, cement, and coal-fired electricity generation. The APP agenda includes the reduction of barriers to trade and investment and technology transfer among the participating countries. The Charter provides in Article 3.1.3 that one of the “functions” of the APP is to:

“identify, assess, and address barriers to the promotion and creation of an enabling environment for development, diffusion, deployment, and transfer of existing, emerging and longer term cost-effective, cleaner, more efficient, and transformational technologies and practices in accordance with the Partners’ priorities”.

To date, APP “action”, however, has been largely limited to formulating plans for projects without serious attention yet given to policy barriers to international trade and investment even though such issues were intended to be on its agenda.

Further, there are concerns that the APP may lead to the creation of a “club good” rather than a global public good and will therefore limit technology diffusion. Indeed, to the extent that any regional arrangement restricts information flow with governments, industry associations and firms that are not inside the region, it has the potential to become an institutionalized mechanism for preventing its innovations from becoming widely available public goods. Instead, they remain proprietary information among regional participants only.

The future of the APP is uncertain since the entry into office of the new US administration and Congress in January 2009 in light of their different priorities about climate change issues.

### 4. Bilateral sectoral agreements: aviation

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The prospect of including aviation in the EU greenhouse gas (GHG) emissions trading scheme (ETS) has been met with much hostility by the US government and industry. The specific issue is the proposed inclusion of international flights into and out of EU airports by non-EU airlines. The European Union has

reiterated its intention to proceed with its plan to incorporate aviation in the EU ETS despite US objections. This is a trade issue as well as a climate change issue, and it has spilled over into the negotiations of the EU-US “Open Skies” agreements.



Because the Chicago Convention of the 1940s created an arrangement for a series of bilateral aviation agreements, and because the international institutional setting for aviation has been the International Civil Aviation Organization (ICAO), international trade issues for the aviation industry have been addressed outside the multilateral trade system centred in the World Trade Organization (WTO). Indeed, there cannot be a WTO dispute arising from that conflict because aviation is not included in the WTO—though airline *ground services* are covered by the General Agreement on Trade in Services at the WTO.

Further, international aviation (and shipping) have been specifically excluded from the current multilateral climate change regime. However, under the leadership of the European Union and Norway, there are efforts under way to include aviation and shipping in a post-2012 climate agreement. The May 19 version of the “negotiating text”

**“The prospect of including aviation in the EU greenhouse gas emissions trading scheme has been met with much hostility by the US government and industry”**

for the Copenhagen meetings included several proposals for aviation, particularly as a source of revenues for adaptation to climate change.<sup>4</sup>

Meanwhile, climate change issues have been receiving some attention in the ICAO and in the International Maritime Organization (IMO). However, the slowness with which these international institutions have responded to climate change and related trade issues raises concerns about the potential of these

agencies of being used by industry for “regulatory capture” purposes. They have mostly addressed technical issues such as those associated with measuring emissions, without seriously

addressing ways of reducing such emissions. Both the ICAO and IMO, however, have reported their intention in making progress on the substantive issues of how to reduce GHG emissions by December 2009, the date of the UNFCCC Conference of the Parties in Copenhagen.

## 5. Conclusions: potential for synergistic interplay?

This brief analysis suggests three different conclusions with respect to the potential for synergistic interplay in the climate and trade negotiations. First, there is the possibility of win-win outcomes for agreements that would increase international transfers of climate-friendly technologies. Second, *there could be* win-win outcomes for the APP as a regional agreement, but there is a risk that the benefits could be limited to the regional “club” and not more generally available outside the club. Finally, for aviation, it seems *unlikely* that there will be significant win-win outcomes given the current combination of a large number of

bilateral aviation agreements, the traditional placement of international regulatory issues in the ICAO, and the reluctance until recently in the UNFCCC process to address international aviation issues. On the other hand, there is the potential for such outcomes if European governments and EU institutions persist in their efforts to bring aviation—and shipping—fully into the climate regime.

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## Endnotes

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<sup>1</sup> For analyses of the broad context of the intersections of climate change and trade issues, see Brewer, T.L. (2003). The Trade Regime and the Climate Regime: Institutional Evolution and Adaptation, *Climate Policy*, 3, 329-341; Brewer, T.L. (2004). The WTO and the Kyoto Protocol: Interaction Issues, *Climate Policy*, 4, 3-12; and a forthcoming symposium on Trade and Climate Change in *The World Economy*.

<sup>2</sup> Some of the themes of this article have been developed more extensively in Brewer, T.L. (2008). Climate Change Technology Transfer: A New Paradigm and Policy Agenda, *Climate Policy*, 8, 516-526; Brewer, T.L. (2008). International Energy Technology Transfers for Climate Change Mitigation. CESifo Working Paper no. 2408. Presented at CESifo Venice Summer Institute, Workshop on “Europe and Global Environmental Issues”; Brewer, T.L. (2009). Technology Transfer and Climate Change: International Flows, Barriers and Frameworks. In Brainard, L. (ed.). *Climate Change, Trade and Competitiveness*. The Brookings Institution, Washington, D.C.

<sup>3</sup> McGee, J. and Taplin, R. (2006). The Asia-Pacific Partnership on Clean Development and Climate. A Complement or Competitor to the Kyoto Protocol?, *Global Change, Peace & Security* 18, 173-192.

<sup>4</sup> See especially FCCC/AWGLCA/2009/8, Chapter IV “Enhanced action on financing, technology and capacity-building”, para. 173, options 4 and 5. Available online on <http://www.unfccc.int>.



# PART III: Unilateral Measures – Exploring Carrots and Sticks

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## Would Unilateral Border Adjustment Measures be Effective in Preventing Carbon Leakage?

Julia Reinaud

### 1. Introduction<sup>1</sup>

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As governments in developed countries start driving the wedge of a carbon price into industrial activities subject to international competition, they are increasingly aware of possible repercussions on industrial competitiveness and on the risk of carbon leakage (i.e. a relocation of greenhouse gas (GHG) emissions to the non-carbon constrained regions). Indeed, to reduce GHG emissions, not all countries are proceeding at equal speed under the recognized principle of “common but differentiated

responsibilities and respective capabilities”.<sup>2</sup> In this context, to address these economic and environmental concerns, some countries have put forward several types of measures. One measure includes the implementation of a border adjustment, whereby a carbon price is adjusted at the border for internationally traded products. This article overviews the efficiency of the current proposals in the European Union and the United States in preventing carbon leakage within global manufacturing sectors.

### 2. Asymmetric climate policies

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To reduce emissions in Europe, power generation and heavy energy-consuming industries have been the targets of a system (also called the EU emissions trading system (ETS), in place since 2005) that caps emissions and allows trading of CO<sub>2</sub> emission allowances among participants for compliance purposes. Several countries have followed suit and similar trading schemes are now in development in Australia, Switzerland, Canada and several US States (e.g. the Regional Greenhouse Gas Initiative among states in the northeast of the

United States), while the Obama administration plans a United States federal system.

The choice of sectoral coverage for an ETS is a natural bias given that certain sectors may represent a relatively large contribution to the environmental problem at stake, have a manageable number of installations that can be included in the regime without entailing excessive administrative costs, and include a variety of technological options available to reduce emissions. However, the introduction of a cap that visibly prices CO<sub>2</sub>

***“The introduction of a cap that visibly prices CO<sub>2</sub> emissions in a subset of the world regions distorts the playing field, creating a risk of carbon leakage and job losses for sectors exposed to international competition”***

emissions in a subset of the world regions distorts the playing field, creating a risk of carbon leakage and job losses for sectors exposed to international competition.

An ETS (also called cap-and-trade scheme) such as the EU ETS introduces two types of costs—direct and indirect—for manufacturers of GHG-intensive goods. Direct costs will be incurred from activities to control GHG or CO<sub>2</sub> emission levels or acquire emission allowances for compliance purposes if the manufacturer emits above their initial allocated cap. Indirect costs are created by the likelihood that sectors covered by the ETS will increase their prices.<sup>3</sup> For example, fossil-fuel power generators are likely to pass on their CO<sub>2</sub> costs onto wholesale electricity prices, thereby increasing the price of electricity.<sup>4</sup> Another indirect cost materializes from increases in prices of raw materials that allow manufacturers to emit less CO<sub>2</sub> (e.g. natural gas compared to blast furnace gas or coal).

An analysis of manufacturing sectors uncovers great differences in their exposure to these carbon costs. Vulnerability to these costs depends on factors such as: GHG output per tonne of product (i.e. emission-intensity); exposure to indirect costs, electricity in particular (i.e. electricity-intensity); and exposure to international competition (i.e. trade exposure).<sup>5</sup> Emission-intensive sectors typically include cement or steel production from blast furnaces. Electricity-intensive sectors include the aluminium sector and steel produced via recycling methods.<sup>6</sup> Sectors with international exposure where production is relatively easy to relocate are vulnerable to distortions in the competition playing field provided there is excess capacity in the rest of the world. For example, aluminium, steel and, to a lesser extent, cement (depending on whether the cement kiln is located in-land or on a coastal area) qualify as trade-exposed sectors. These sectors also have some degree of product and process uniformity, leaving consumers to some extent indifferent to where the products are made as long as they are less expensive.

### 3. Competitiveness-driven carbon leakage

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The implied higher carbon cost associated with energy-intensive industries within the constrained region could create incentives for emissions- or electricity-intensive industries to source carbon-intensive inputs from the unconstrained region and/or to relocate. This would imply a loss of international market share for domestic producers (e.g. European cement) vis-à-vis foreign competitors, which can be translated in economic terms as a loss in competitiveness. But it could also be portrayed through its effects on the environment, highlighting a displacement of GHG emissions from one region to another.

leakage where more products, say from China, are imported into the European Union; and investment leakage, where investment decisions to retrofit existing production in the European Union, for example, are cancelled or where new capacity is being built in China instead of the European Union. As such, under this analysis, changes are driven by inequalities of climate policy costs, and other factors (e.g. changes in exchange rates) do not play a role. In both scenarios, carbon leakage would be visible through changes in international trade patterns of both exports and imports.<sup>7</sup>

Competitiveness-driven carbon leakage is driven through two channels: production

Carbon leakage is of concern to policymakers as it frustrates the underlying objective of the

policy and makes the policy more costly and less efficient by stimulating higher emissions in other countries.<sup>8</sup> As such, carbon leakage may require policy interventions.

## 4. Border adjustment proposals in Europe and the United States

The issues of competitiveness and carbon leakage lend weight to the argument of ultimately creating a global cap-and-trade regime that is as inclusive as possible.<sup>9</sup> The more countries participate under the same constraints, and particularly if all major economies participate, the less the scope for carbon leakage and competitiveness concerns. However, as it stands, the international architecture under the UNFCCC works under a two-tiered approach that differentiates developing and developed countries in their responsibility to reduce emissions, and this will likely continue for some time.

As a result, for sectors vulnerable to carbon leakage, one policy suggested by the European Union and several US Congressional bills would ensure at the border that foreign products are on the same carbon footing as domestically-produced products. In other words, under these proposals domestic manufacturers subject to a carbon price would not be placed at a competitive disadvantage vis-à-vis imported products under less strenuous emission requirements.<sup>10</sup>

In theory, a mechanism adjusting climate policy costs at the border (or border adjustment measure (BAM)) would either impose a tariff on imported goods or importers would have to buy emission allowances on the CO<sub>2</sub> market related to the carbon embedded from production. The country could also rebate the cost of climate policy for exports. Current proposals suggest, nonetheless, only including imports into the scheme, as described below.

- The European Commission has suggested it could implement a “carbon equalization system... with a view to putting EU and non-EU producers on a comparable footing” (i.e. non-EU countries that are not taking “comparable action” to reduce GHG emissions). “Such a system could apply to importers of goods requirements similar to those applicable to installations within the European Union, by requiring the surrender of allowances.”<sup>11</sup>
- In the US House of Representatives, the Waxman and Markey discussion draft bill issued 31 March 2009 called for an “International Reserve Allowance Program” whereby US importers of emission-intensive goods from countries found not to be having “greenhouse gas compliance obligations commensurate with those that would apply in the United States” would be required to purchase and surrender emission allowances.<sup>12</sup>
- In the US Senate, the Boxer Substitute of the Lieberman-Warner bill (S. 3036) and the Bingaman-Specter bill (S.1766) also mention that starting from 2014 and 2020 respectively, importers of products covered by the cap-and-trade scheme would have to purchase allowances from an International Reserve Allowance Programme if no comparable action were taken in the exporting country. Least developed countries and countries that are not significant emitters would be excluded from the scheme.<sup>13</sup>

## 5. (In)effectiveness of border adjustment measures

To effectively address competitiveness-driven carbon leakage, the detailed implementation of the BAM is critical. Its efficiency would also need to be assessed based on its capability to address:

- Climate policy costs for both electricity and emissions-intensive sectors (i.e. both direct and indirect costs) for all products vulnerable to carbon leakage;
- Cost adjustments for both exports and imports; and
- Carbon leakage from both production and investment channels.

Ideally, it would also be assessed in light of its ability to effectively change production behaviour in non-participating countries. However, based on current analysis of the legislative proposals mentioned above, the effectiveness of such a measure in fully preventing carbon leakage is questionable.<sup>14</sup> When deciding on whether to impose border adjustment, details that should be carefully considered include the following issues.

### 5.1. Trade flows

To effectively deal with competitiveness-driven carbon leakage by levelling the playing field, BAMs would need to address all trade flows between the carbon-constrained country and the rest of the world. This implies adjusting the climate policy costs for both imports and exports. It is only under this condition that the level playing field on the international market is restored; yet from an environmental point of view it would be questionable to give rebates on emission-intensive exports. As such, none of the proposed border adjustment systems address exports.

### 5.2. Product coverage

Product coverage is also a central issue in assessing the effectiveness of a BAM in preventing carbon leakage from a sector. If governments chose to include only the most emissions- or energy-intensive products in the scheme in sectors such as steel and aluminium, only semi-finished products (i.e. steel or aluminium ingots) would be covered. This could induce gaming strategies from firms seeking to by-pass the adjustment scheme by further transforming their goods to reach a product category that is exempt from the list of “covered goods”.

The Waxman-Markey discussion draft bill suggests nonetheless the border adjustment would include most products from trade-exposed sectors:

***“The proposed legislative measures in the United States and the European Union fail to adequately address specific competitiveness concerns in vulnerable sectors”***

“Products that would be covered by the border adjustment include both primary products (i.e. iron, steel, steel mill products, aluminium, cement, glass, pulp, paper, chemicals, and industrial ceramics) and any other manufactured product that: (i) is sold in bulk for purposes of further manufacture or inclusion in a finished product; and (ii) generates, in the course of the manufacture of the product, direct greenhouse gas emissions or indirect greenhouse gas emissions.”

This is challenging on two fronts. First, accurately assessing the amount of carbon emitted in the production of a tonne of steel or cement is, in itself, extremely difficult for reasons, among others, related to the definition of a sector boundary and monitoring of inputs.<sup>15</sup> For example, some steel or paper mills also produce electricity that is then sold to the grid, making the emissions inventory for



steel products all the more difficult.<sup>16</sup> Doing the same for vehicles, appliances, industrial equipment, toys or electronics would be nearly impossible. As a result, there is an inherent tension between full coverage on the one hand, and administrative feasibility on the other.

Second, even if an accurate determination of the amount of carbon emitted in the production of a finished good could be made, assigning a price for emissions through a BAM would have a negligible effect on its overall cost. In the case of commodities for which carbon-intensive components only represent a minor share of overall value, such as small iron content of computers, the administrative costs of a BAM may surpass the benefits of introducing such a scheme.<sup>17</sup>

### 5.3. Climate policy costs

Setting the appropriate level of cost adjustment is also critical in preventing carbon leakage. Ideally, the BAM would introduce the same marginal cost for all manufacturers. This implies determining, among others, the cost of the climate policy that needs to be adjusted and the emissions-intensity of imported products.

#### *(a) Which costs?*

To fully address characteristics of sectors, the BAM would need to minimize the climate policy cost differential for both direct and indirect costs. Such a provision is included in the US congressional bills, as well as in a European directive (at least for ETS-induced increases in electricity prices). Yet a related challenge involves determining the level of indirect costs for companies operating in liberalized electricity markets. Indeed, each industrial activity has a different electricity cost depending on their electricity purchasing strategy. Additionally, to restore the competition playing field, in theory, the BAM should also cover other indirect costs of the ETS, such as increases in prices following a surge in demand

for commodities whose consumption results in a reduction of carbon embedded in production (e.g. scrap metal).<sup>18</sup>

#### *(b) What CO<sub>2</sub> price?*

Emission allowances differ from CO<sub>2</sub> taxes. In an ETS, the price of allowances varies as they are traded daily. Hence, costs of a climate policy will be different for each company and based on the day they purchased their allowances (if needed) and signed their electricity contract.<sup>19</sup> Complications arise further when companies are authorized to sell and buy allowances on the open market and some allowances are provided for free.<sup>20</sup> As such, determining the baseline for the adjustment would need to be made on an activity-by-activity level to accurately restore the playing field. But this would also require enormous administrative efforts from both companies and governments.<sup>21</sup>

#### *(c) Where to buy the emissions allowances?*

Requiring importers to purchase emissions allowances on the allowance market creates the risk of inflating allowance prices, which could further accentuate carbon leakage if the border adjustment is not designed effectively.<sup>22</sup> Answers to this question include the creation of a separate reserve of allowances where importers could buy their allowances for compliance purposes. This is suggested in the US House bill, where allowance requirements for imports would operate separately from, and parallel to, the domestic emissions allowance requirements.

#### *(d) Based on what emissions intensity?*

Under most US proposals, the carbon content of imported goods would be assessed using a nation-wide average for the country of origin.<sup>23</sup> Some experts have argued that the amount of emissions imputed to imports should be based on “a technology that is

commercialized, perhaps by requiring a certain market share on the world markets of the products build with the BAT [best available technology] production process". Given changing technology and regulatory circumstances, some flexibility would be required to allow for adjustment over time.<sup>24</sup> Such calculations create, however, little incentives for importers of carbon-intensive products to improve their emissions intensity, thereby reducing carbon leakage. Assessing the carbon intensity at the level of firms, rather than at the national level, would avoid this trap, and yet would involve significant administrative efforts to measure, track, monitor and report emission levels. Yet, overall, it is unclear whether or not this would impact carbon leakage from a sector's perspective. Additional analysis is required.

#### **5.4. Country coverage**

In the EU proposal, the carbon equalization system would only become effective if Europe decides that mitigation efforts of emerging economies are inadequate. Similarly, the US House discussion draft proposes the creation of an International Climate Change Commission that would assess whether the United States' trading partners have undertaken GHG abatement policies "comparable" to those in the United States.

Beyond the compatibility of these provisions with rules of the World Trade Organization (WTO) (if only exports from certain countries are subject to the BAM), the system could become ineffective in preventing carbon leakage if companies see opportunities to game the system. For example, companies might see some loopholes if they can re-route their products through countries that are not subject to the BAM.<sup>25</sup>

An answer to this gaming strategy includes multilateral BAMs, whereby all countries would agree to adjust carbon costs at their border.

Yet the difficult issue of defining comparable action (and setting the adjustment level) should not be underestimated. While no CO<sub>2</sub> price is currently applied in China (as in most other economies), this does not indicate that it is not mitigating emissions. For example, in 2006, China announced efforts to decommission hundreds of small, old industrial plants. Many of the plants were in the cement and steel sectors, but other chemical, refining, and manufacturing facilities were slated for closure as well. In autumn 2007, China also introduced a temporary export tax at around 25 per cent for steel, between 0-15 per cent for aluminium products and 15 per cent for cement, most of which already experienced a reduction or cancellation of export value-added-tax (VAT) rebates.<sup>26</sup> Converting the actual export tax into EU quotas price, for steel, the cancellation of VAT rebates has the same effect as the rest of the world imposing a quota price or tax of US\$ 65/tCO<sub>2</sub>. For cement, the equivalent CO<sub>2</sub> price would be around US\$ 12/tCO<sub>2</sub>.<sup>27</sup>

In the future, various regions may adopt a range of policies with implicit or explicit carbon costs. As such, determining the baseline for the adjustment may be even more complex as countries start adopting these different types of policies (standardization of production, voluntary emission reduction schemes, etc.).<sup>28</sup>

#### **5.5. Encouraging emission reduction in developing countries**

Would BAMs be, if imposed unilaterally, effective in encouraging changes in behaviour in developing countries? If yes, this would reduce carbon leakage; the increase in emissions abroad would be lower than in a business-as-usual scenario.

Focusing on China's exports, only a small share of goods covered in the EU ETS and produced in China end up in Europe or in the United States. The composition of Chinese

exports varies according to different sectors, but is small relative to its total production. In 2007, only 2 per cent of the aluminium, steel and paper produced in China were exported to Europe and the United States. In the cement sector, exports to both countries represent less than 1 per cent of Chinese cement production.<sup>29</sup> As such, unilateral BAMs applied only in Europe or in the United States may have a small leverage effect on China.

The answer to this question may also be the implementation of multilaterally agreed BAMs. Yet it would be critical to ensure that the multilateral scheme recognizes the principle of “common but differentiated responsibilities” (UNFCCC Article 3.1).<sup>30</sup>

## 6. Conclusions

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The proposed legislative measures in the United States and the European Union fail to adequately address specific competitiveness concerns in vulnerable sectors. Moreover, the border adjustment approach currently considered in these proposals might not be suitable to fully address carbon leakage concerns. While they may be effective in addressing leakage concerns for importing emissions-intensive sectors, they are not appropriate for exporting emission-intensive sectors. Indeed, current proposals do not suggest rebating carbon costs for exports.

As designed today, BAMs address leakage through changes in production levels, but it is unclear whether it would hamper investment leakage (e.g. plant relocations). Drivers of investments are multiple, and while climate policy costs may affect the production cost structure for industry, in many instances, the relative importance of this cost is lower than other elements (e.g. energy or electricity prices, raw material price). Indeed, the carbon price is only one factor among many that influence production and investment decisions.

In order to remain consistent with WTO rules, if a BAM were implemented and domestic manufacturers were allocated free CO<sub>2</sub> allowances for reasons related to competitiveness loss, foreign manufacturers

could arguably demand free allowances once they enter the carbon-constrained market, which in turn could possibly increase carbon leakage.<sup>31</sup>

Finally, the politically sensitive aspects of the BAMs discussed to counter carbon leakage concerns highlight the importance of a careful assessment of the reality and significance of the issue. Policymakers need to seriously consider today’s trends in industrial development to understand how large (or small) an impact climate policy may have on it. Without such an analysis, policymakers will not be in a position to balance the cost of leakage mitigation measures against the benefits (i.e. avoiding competitive loss and higher emissions elsewhere). While not sufficiently mentioned in this article, the administrative requirements, costs and technical practicality of BAMs may be the greatest barrier to their implementation.

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## Endnotes

<sup>1</sup> This paper draws extensively from Reinaud, J. (2008). *Issues behind Competitiveness and Carbon Leakage*. IEA Information Paper. IEA/OECD, Paris. It also draws to a large extent on Reinaud, J. and Wooders, P. (forthcoming). *Options for Policy Makers: Addressing Competitiveness, Leakage and Climate Change*. International Institute for Sustainable Development, Winnipeg.

<sup>2</sup> The Kyoto Protocol, linked to the UNFCCC, reflects this asymmetry where so-called Annex B country Parties (i.e. developed countries) have quantitative emission objectives while developing countries such as China are so far exempt from emission goals as the Protocol places a lighter burden on developing nations. This reflects the recognized principle of “common but differentiated responsibilities and respective capabilities” (i.e. UNFCCC Article 3.1).

<sup>3</sup> Reinaud, supra note 1.

<sup>4</sup> Reinaud J. (2003). *Emissions Trading and its Possible Impacts on Investment Decisions in the Power Sector*. IEA Information Paper. IEA/OECD, Paris.

<sup>5</sup> Reinaud and Wooders, supra note 1.

<sup>6</sup> Reinaud, J. (2009). *Trade, Competitiveness and Carbon Leakage: Challenges and Opportunities*. Programme Paper Energy, Environment and Development. Chatham House, London.

<sup>7</sup> When analysing changes in trade flows following the introduction of ETS, the difficulty resides nonetheless in the identification of what is attributable to climate policy and not to other factors (e.g. changes in exchange rates, slowdown in demand, etc.).

<sup>8</sup> Reinaud, supra note 1; Reinaud and Wooders, supra note 1.

<sup>9</sup> *Ibid.*

<sup>10</sup> Reinaud, supra note 6.

<sup>11</sup> European Commission (2008). *Proposal for a Directive of the European Parliament and of the Council Amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading System of the Community*. COM(2008) 16 final, European Commission, Brussels.

<sup>12</sup> Congressmen Waxman and Markey (2009). *American Clean Energy and Security Act of 2009 Discussion Draft*, Committee on Energy and Commerce, House of Representatives.

<sup>13</sup> Nonetheless, while the Boxer-Lieberman-Warner bill failed to pass the Senate in 2008, the Bingaman-Specter bill did not reach the Senate floor. In 2009, a new series of cap-and-trade bills are expected in the Senate.

<sup>14</sup> Reinaud, supra note 1; Reinaud, supra note 6; Quirion, P. and Monjon, S. (2008). *Border Adjustments: Implications of Design Options*. Presentation for the workshop on “The EU Climate Policy and Border Adjustment: Designing an Efficient and Politically Viable Mechanism”, Ecole Polytechnique, Paris, 15 September 2008; and Reinaud and Wooders, supra note 1.

<sup>15</sup> Reinaud, supra note 1.

<sup>16</sup> Reinaud and Wooders, supra note 1.

<sup>17</sup> Reinaud and Wooders, supra note 1.

<sup>18</sup> For further details on this issue, see Reinaud, supra note 1 and 6; Reinaud, J. (2007). *CO<sub>2</sub> Allowance and Electricity Price Interaction – Impact on Industry’s Electricity Purchasing Strategies in Europe*. IEA Information Paper, IEA/OECD, Paris. Available at [http://www.iea.org/textbase/papers/2007/jr\\_price\\_interaction.pdf](http://www.iea.org/textbase/papers/2007/jr_price_interaction.pdf).

<sup>19</sup> Reinaud, supra note 1.

<sup>20</sup> Genasci, M. (2008). *Border Tax Adjustments and Emissions Trading: the Implications of International Trade Law for Policy Design*, *Carbon and Climate Law Review* 1(2), 33-42.

<sup>21</sup> Reinaud and Wooders, supra note 1.

<sup>22</sup> Reinaud, supra note 1.

<sup>23</sup> Houser, T., Bradley, R., Childs, B., Werksman, J. and Heilmayr, R. (2008). *Leveling The Carbon Playing Field: International Competition and U.S. Climate Policy Design*. Peterson Institute For International Economics and World Resources Institute, Washington, D.C.

<sup>24</sup> *Climate Strategies* (2008). *International Cooperation to Limit the Use of Border Adjustment*. Workshop organized by the South Centre, Geneva.

<sup>25</sup> Two difficult related questions include determining the rule of origin of products such as cars, etc. and defining comparability of action.

<sup>26</sup> China no longer welcomed exports in two categories: products that consume large amounts of energy or create much pollution in the production process; and products that involve a low level of skill and rely on cheap wages, energy and materials.

<sup>27</sup> In light of the current economic slow-down, however, China reinstated tax rebates on exports of extruded aluminum profiles, widely used in the construction sector, as part of its latest move to boost exports, industry sources said in November 2008. See Wang, X. (2008). *Export Tax in China – A Possible Substitute for EU Import Tax?*, Presentation at IDDRI, Paris, 16 July 2008.

<sup>28</sup> Two adjacent observations on the question of comparable action could be made: 1) Is it about the comparability of stated/intended climate policies (e.g. a quantified cap), or about the actual emission reductions achieved?; 2) How to take into account climate policies aimed at emission reductions in the long-term (e.g. through technological innovation)?

<sup>29</sup> Houser, T. (2008). *Carbon Tariffs – Why Trade Sanctions Won’t Work*, *China Economic Quarterly* 2008(3), 33-38.

<sup>30</sup> This is suggested by Godard, O. (2007). *Unilateral European Post-Kyoto Climate Policy and Economic Adjustment at EU Borders*. Cahier n° DDX - 07-15. Ecole Polytechnique, Paris; and Ismer, R. and Neuhoff, K. (2007). *Border Tax Adjustments: A feasible way to support stringent emissions trading*, *European Journal of Law and Economics* 24, 137-164.

<sup>31</sup> This could be the case if a “tradable permit standard” were implemented (in addition to a federal cap-and-trade system), as proposed by the Coalition for Sustainable Cement Manufacturing and Environment in the context of state-wide California climate change efforts. Under such a scheme, the State of California would enact an energy-performance or energy-intensity standard for certain products (say, a tonne of steel cannot have a carbon-footprint of more than x tons of CO<sub>2</sub>) and products producing less than the benchmark would obtain carbon credits and products above the benchmark would have to buy credits to make up for their heavy carbon-footprint, irrespective of where the products are made. See Pauwelyn J. (2009). *Testimony Before the Subcommittee on Trade of the House Committee on Ways and Means*, Washington, D.C., 24 March 2009. Available at <http://waysandmeans.house.gov/media/pdf/111/pauw.pdf>.

# Encouraging Developing Country Involvement in a Post-2012 Climate Change Regime: Carrots, Sticks or Both?

*ZhongXiang Zhang*

## 1. Introduction

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The climate-trade nexus has become the focus of an academic debate and has gained increasing attention as governments are taking great efforts to forge a post-2012 climate change regime to succeed the Kyoto Protocol. With concerns about their own competitiveness and growing greenhouse gas (GHG) emissions in developing countries, some industrialized countries, if not all, are considering whether to impose unilateral trade measures against developing country trading partners. While it is clear that GHG emission reduction targets of developed countries need to be tightened further in a post-2012 climate change regime, developing country involvement is also crucial for climate change mitigation and adaptation, given that climate change is a global problem requiring a global response. This raises the issue of which approach would be most likely to stimulate developing countries to take appropriate actions in the post-2012 climate regime. Would positive or negative incentives work best, in other words, do we need carrots, sticks or both?

This article seeks to answer this question. By revisiting the six options for China's climate change engagement that I envisioned a decade ago and examining a variety of factors, the article first discusses how far developing country commitments can go in an immediate post-2012 climate regime.<sup>1</sup> It argues that developing country commitments are unlikely to go beyond defined policies and measures in this timeframe. It notes that the type of border adjustment provisions currently being discussed by most developed countries include more sticks than carrots for developing countries. Although sticks can be incorporated, it is argued that they should be credible and realistic and serve as a useful supplement to push developing countries to take actions or adopt policies and measures earlier than would otherwise have been the case. In order to encourage developing countries to do more to combat climate change, the article suggests that developed countries should rather focus on carrots.

## 2. Developing country commitments in an immediate post-2012 climate regime<sup>2</sup>

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A decade ago, the fact that the United States took on emission reduction commitments at Kyoto, coupled with diplomatic and public pressure, put great expectations on China to take on some kind of commitment. Under these circumstances, and in anticipation that the United States would take on

more stringent commitments in the post-2012 period, I envisioned the following six proposals that could be put on the table as China's plausible negotiation position, which are described in ascending order of stringency.

First, China could regard its active participation in the Clean Development Mechanism as “meaningful participation”.

Second, just as Article 3.2 of the Kyoto Protocol requires Annex I countries to “have made demonstrable progress” in achieving their commitments by 2005, China could commit to demonstrable efforts towards slowing its GHG emissions growth at some point between the first commitment period and 2020.

Third, if the above commitment is not considered “meaningful”, China could make voluntary commitments to specific policies and measures to limit GHG emissions at some point between the first commitment period and 2020. Policies and measures might need to be developed to explicitly demonstrate whether or not China has made adequate efforts.

Fourth, China could make a voluntary commitment to total energy consumption or total GHG emissions per unit of gross domestic product (GDP) at some point around or beyond 2020. In my view, carbon intensity of the economy is preferred to energy intensity of the economy because all the efforts towards shifting away from high-carbon energy are awarded by the former.

The fifth option would be for China to voluntarily commit to an emissions cap on a particular sector at some point around or beyond 2020. Taking on such a commitment, although already burdensome for China, could raise the concern about carbon leakage from the regulated sector to those sectors whose emissions are not capped.

This leads to the final option that China could offer: a combination of a targeted carbon intensity level with an emissions cap on a

particular sector at some point around or beyond 2020. This is the bottom line: China cannot afford to go beyond this point until its per capita income catches up with the level of middle-developed countries.<sup>3</sup>

At the time this list was initially drafted, it looked like China would be pressured to take on commitments at a much earlier date than what it wanted. This situation changed once the United States withdrew from the Kyoto Protocol. A decade later, we see that the ideas of commitments based on carbon intensity and sectoral approaches are formally incorporated into the “Bali Road Map”. This Road Map, which was agreed to at the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties meeting in December 2007, sets out the

course for developing post-2012 commitments, with a clear deadline for conclusion by 2009. This is a very positive development, and clearly indicates the policy relevance of the ideas that once sounded theoretical. However, I

seriously doubt that developing countries will go beyond the aforementioned third option (i.e. commitment to defined policies and measures) between 2013 and 2020 for the following reasons.

First, given the very short time frame to conclude the negotiations, it would be impossible, in all likelihood, to agree on the level of ambition for developing countries, including the particular countries and sectors covered, and on the specific rules, especially due to the amount of data that would be required.

Second, it is inconceivable that developing countries would ever go beyond the aforementioned third option between 2013 and

***“A decade ago, the fact that the United States took on emission reduction commitments at Kyoto, coupled with diplomatic and public pressure, put great expectations on China to take on some kind of commitment”***



2020 without an effective financial mechanism. The pledged funding under the UNFCCC and its Kyoto Protocol represents only a small percentage of the anticipated mitigation and adaptation needs of developing countries.<sup>4</sup> Unless this funding situation changes significantly, which is not likely to happen, developing countries cannot afford to make commitments beyond defined policies and measures.

Third, the United States factor will continue to play a role in affecting developing countries'

willingness to take on commitments and the ambition of these commitments. While it was not adopted by the US Senate in 2008, the Lieberman-Warner Climate Security Act provides a good idea of what future US climate legislation might look like. Even if the Climate Security Act became law, US emissions in 2020 would at best be kept at their 1990 level. This is far from the drastic cuts in emissions developing countries would expect before taking on their own commitments.

### 3. Encouraging developing countries to take climate actions: sticks and their limits

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Understandably, the United States and other industrialized countries would like to see developing countries, in particular large developing economies, go beyond commitments on policies and measures because of concerns about their own competitiveness and growing GHG emissions in developing countries. They are considering the use of unilateral trade measures to induce developing countries to do so. Indeed, a variety of measures have been put forward for consideration by US legislators. These measures fall into the three broad categories: border adjustment measures, performance standards and carbon market design. To date, there is considerable disagreement as to what measures would be most likely to pass muster under the World Trade Organization (WTO). For a number of reasons, including WTO consistency, the reality of the current political situation, and effectiveness in terms of actual emissions reductions, industrialized countries need to focus on carrots, supported by sticks (e.g. border adjustment measures and similar trade-related measures or conditions on access to carbon markets), as a means of encouraging developing countries to do more to combat climate change. The

Montreal Protocol on Substances that Deplete the Ozone Layer clearly demonstrates that an approach of carrots (financial assistance and technology transfer) assisted with sticks (trade restrictions) works effectively in achieving its legitimate environmental objective.

However, measures as proposed in the Climate Security Act hold out more sticks than carrots to developing countries. A proposal by the International Brotherhood of Electrical Workers and American Electric Power would have required importers to obtain emission allowances to cover the carbon content of certain products from countries that do not take climate actions comparable to that of the United States. The original version of the bill incorporated this mechanism, threatening to punish energy-intensive imports from developing countries by requiring importers to obtain emission allowances, but only if they had not taken comparable action by 2020, eight years after the effective start date (2012 as proposed) of a US cap-and-trade regime. It was argued that the inclusion of trade provisions would give the United States additional diplomatic leverage to negotiate multilaterally and bilaterally with



other countries on comparable climate actions. Should such negotiations not succeed, trade provisions would provide a means of levelling the carbon playing field between US energy-intensive manufacturers and their competitors in countries not taking comparable climate actions. Not only would the proposed amendment have imposed an import allowance purchase requirement too quickly, it would also have dramatically expanded the scope of punishment: almost any manufactured product would potentially have qualified. If strictly implemented, such a provision would pose an insurmountable hurdle for developing countries.

It should be emphasized that the aim of including trade provisions is to facilitate negotiations while keeping open the possibility of invoking trade measures as a last resort. The latest version of the Climate Security Act brought the deadline forward to 2014 to gain business and union backing.<sup>5</sup> The inclusion of trade provisions might be considered the “price” of passage for any US legislation capping its GHG emissions. Put another way, it is likely that no climate legislation can move through US Congress without dealing with the issue of trade provisions. An important issue on the table is the length of the grace period to be granted to developing countries. While many factors need to be taken into consideration here, further bringing forward the imposition of allowance requirements to imports is rather unrealistic, given the already very short grace period ending 2019 in its original version. It should be noted that the Montreal Protocol grants developing countries a grace period of 10 years. Given that the scope of economic activities affected by a climate regime is several orders of magnitude larger than those covered by the Montreal Protocol, if legislation incorporates border adjustment measures, in my view, they should not be invoked until at

least 10 years after mandatory US emission targets take effect.

Moreover, unrealistically shortening the grace period granted before resorting to the trade provisions would increase the uncertainty of whether the measure would withstand a challenge before the WTO. As the ruling in

**“The inclusion of trade provisions might be considered the ‘price’ of passage for any US legislation capping its GHG emissions”**

the *Shrimp-Turtle* dispute indicates, for a trade measure to be considered WTO-consistent, a period of good faith effort to reach agreement among the countries concerned

is needed before imposing the measure.<sup>6</sup> Put another way, trade provisions should be preceded by major efforts to negotiate with partners within a reasonable time frame.<sup>7</sup> Furthermore, developing countries need reasonable time to develop and implement national climate policies and measures. Take the establishment of an emissions trading scheme as a case in point. Even for the US SO<sub>2</sub> Allowance Trading Programme, the entire process from the US Environmental Protection Agency beginning to compile the data for its allocation database in 1989 to publishing its final allowance allocations in March 1993 took almost four years. For the first phase of the EU emissions trading scheme, the entire process took almost two years from the European Union publishing the Directive establishing a scheme for GHG emission allowance trading on 23 July 2003 to approving the last national allocation plan for Greece on 20 June 2005. For developing countries with very weak environmental institutions and a lack of dependable data on emissions, fuel uses and outputs for installations, this allocation process is expected to take much longer than in the United States and the European Union.<sup>8</sup>

In the case of a WTO dispute, the question will arise whether there were any alternatives to trade provisions that could be reasonably expected to fulfill the same function but are

not inconsistent or less inconsistent with the relevant WTO provisions. In the GATT Thai cigarette dispute, the Dispute Settlement Panel concluded that Thailand had legitimate concerns with health, but it had measures available to it other than a trade ban that would be consistent with the General Agreement on Tariffs and Trade (GATT) (e.g. bans on advertising).<sup>9</sup> Indeed, there are alternatives to resorting to trade provisions to protect the US trade-sensitive, energy-intensive industries during the period of negotiations with trading partners on comparable actions. One way to address competitiveness concerns is to initially allocate free emission allowances to those sectors vulnerable to global competition, either totally or partially. One study has shown that initially giving out about 13 per cent of the allowances to fossil fuel suppliers freely instead of auctioning in an emissions trading scheme in the United States would be sufficient to prevent their profits from falling.<sup>10</sup>

To pass WTO scrutiny of trade provisions, the United States is likely to make reference to the health and environmental exceptions provided under GATT Article XX. This Article authorizes governments to employ otherwise GATT-illegal measures when such measures are necessary to deal with certain enumerated public policy problems. The GATT panel in *Tuna/Dolphin II* concluded that Article XX does not preclude governments from pursuing environmental concerns outside their national territory, but such extra-jurisdictional application of domestic laws would be permitted only if aimed *primarily* at having a conservation or protection effect.<sup>11</sup> The capacity of the planet's atmosphere to absorb GHG emissions without adverse impacts is an "exhaustible natural resource". Thus, if countries take measures on their own including extra-jurisdictional application *primarily* to prevent the depletion of this "exhaustible natural resource", such measures will have a strong justification under GATT Article XX. Along this reasoning, if the main objective of the trade provisions

in the Climate Security Act is to protect the environment by requiring other countries to take action comparable to that of the United States, then mandating importers to purchase allowances from the designated special international reserve allowance pool is debatable under GATT Article XX. To increase the prospects for a successful WTO defence, trade provisions can refer to the designated special international reserve allowance pool, but may not do so without adding "or equivalent". This will allow importers to submit equivalent emission reduction units that are not necessarily allowances but are recognized by international treaties to cover the carbon contents of imported products.

Besides the issue of WTO consistency, there will be methodological challenges in implementing trade provisions. Identifying the carbon content embodied in traded products will present formidable technical difficulties given the wide range of technologies in use around the world and very different energy resource endowments and consumption patterns among countries. In the absence of any information regarding the carbon content of the products from exporting countries, importing countries, the United States in this case, could, for instance, prescribe the tax rates based on their domestically predominant method of production for the imported products. This practice is by no means without foundation. For example, the US Secretary of the Treasury has adopted the approach in the tax on imported toxic chemicals under the Superfund Tax.<sup>12</sup> To be more defensible, it should allow foreign producers to challenge the carbon contents applied to their products to ensure that they will not pay for more than they have actually emitted.

## 4. Concluding remarks

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Governments are taking great efforts to forge an agreement on comparable climate actions in the post-2012 climate negotiations. Aimed at levelling the carbon playing field, the inclusion of trade-related provisions is considered useful by some in both facilitating the adoption of such an agreement and effectively implementing it.

With concerns about their own competitiveness and growing GHG emissions in developing countries, some industrialized countries, if not all, are considering the term “comparable” as the standard by which to assess the efforts made by their trading partners in order to decide on whether to impose unilateral trade measures. This clearly indicates a need to define comparable efforts towards climate mitigation and adaptation in order to discipline the use of unilateral trade measures at the international level, taking into account differences in national circumstances, such as current level of development, per capita GDP, current and historical emissions, emission intensity, and per capita emissions.

While the Climate Security Act died on the floor of the US Senate, this is by no means the end of the prospect for unilateral trade measures like the border adjustment measure stipulated in the US bill, given that the inclusion of such trade provisions might be considered the “price” for passing any legislation capping GHG emissions. In addition to methodological challenges in implementing the Lieberman-Warner type of border adjustment provision, this article has argued that this type of border adjustment provision is likely to face a WTO-consistency challenge. To increase the prospects for a successful WTO defence, there should be a period of good faith efforts to reach agreement among the countries concerned before imposing such trade measures. Furthermore, WTO consistency also requires considering alternatives to trade

provisions for the same function. The article has suggested that trade provisions can refer to the designated special international reserve allowance pool, but should allow importers to submit equivalent emission reduction units that are recognized by international treaties to cover the carbon contents of imported products.

It should be emphasized that the US Climate Security Act contained more sticks than carrots for developing countries. If the United States and other industrialized countries really want to persuade developing countries to do more to combat climate change, they should first reflect why developing countries are unwilling to make, and cannot afford to go beyond, commitments on policies and measures. That will require industrialized countries to seriously consider developing country’s legitimate demand that industrialized countries need to demonstrate that they have taken the lead in reducing their own GHG emissions, provide significant funding to support developing country’s climate change mitigation and adaptation efforts and to transfer low- or zero-carbon emission technologies at an affordable price to developing countries. Put simply, industrialized countries need to provide positive incentives to encourage developing countries to do more. Carrots should serve as the main means. Sticks can be incorporated, but only if they are credible, realistic and serve as a useful supplement to push developing countries to take actions or adopt policies and measures earlier than would otherwise have been the case. At a time when the world community is starting to negotiate a post-2012 climate regime, unrealistic border adjustment measures are counterproductive in reaching such an agreement on comparable climate actions.

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## Endnotes

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<sup>1</sup> Zhang, Z.X. (2000). Can China Afford to Commit itself an Emissions Cap? An Economic and Political Analysis, *Energy Economics* 22(6), 587-614.

<sup>2</sup> For detailed discussion, see Zhang, Z.X. (2008). Multilateral Trade Measures in a Post-2012 Climate Change Regime?: What Can Be Taken from the Montreal Protocol and the WTO? Available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1328548](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1328548); Zhang, Z.X. (2009). How Far Can Developing Country Commitments Go in an Immediate Post-2012 Climate Regime?, *Energy Policy* 37(5), 1753-1757.

<sup>3</sup> Zhang, supra note 1, 606-609.

<sup>4</sup> Zhang, supra note 2.

<sup>5</sup> This is in line with the IBEW/AEP proposal, which requires US importers to submit allowances to cover the emissions produced during the manufacturing of those goods two years after the United States starts its trade-and-cap programme.

<sup>6</sup> *United States — Import prohibition of certain shrimp and shrimp products*, Appellate Body Report, WT/DS/58/AB/R, 12 October 1998.

<sup>7</sup> Zhang, Z.X. (2004). Open Trade with the US without Compromising Canada's Ability to Comply with its Kyoto Target, *Journal of World Trade* 38(1), 155-182; Zhang, Z.X. and Assunção, L. (2004). Domestic Climate Policy and the WTO, *The World Economy* 27(3), 359-386.

<sup>8</sup> Zhang, Z.X. (2007). Why Has China not Embraced a Global Cap-and-Trade Regime?, *Climate Policy* 7(2), 166-170.

<sup>9</sup> *Thailand: Restrictions on Importation and Internal Taxes on Cigarettes*, Report of the Panel, DS10/R, 7 November 1990.

<sup>10</sup> Bovenberg, L. and Goulder, L. (2002). Addressing Industry-Distributional Concerns in US Climate Change Policy, Unpublished manuscript, Department of Economics, Stanford University.

<sup>11</sup> *United States: Restrictions on the Imports of Tuna*, Report of the Panel (not adopted), DS29/R, 16 June 1994. Also see Zhang, Z.X. (1998). Greenhouse Gas Emissions Trading and the World Trading System, *Journal of World Trade* 32(5), 219-239.

<sup>12</sup> See *United States – Taxes on Petroleum and Certain Imported Substances*, Report of the Panel adopted on 17 June 1987, L/6175.



# Multilateral Negotiations and Unilateral Discrimination from a World Trade Organization Legal Perspective

Jochem Wiers

## 1. Introduction

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While policymakers are preparing themselves for the final stretch of negotiations on the extension or successor of the Kyoto Protocol in Copenhagen in December 2009, many questions remain open as to how to reach agreement, including scientific, political, economic, communication and legal questions. While contributions to the debate about climate change policy come from all sorts of angles and disciplines, this article tries to deliver a modest contribution to the legal debate. It starts from the fact that major players in the debate, the United States and the European Union among them, are considering the possibility of applying some sort of border adjustment measure to goods from other countries not applying comparable or otherwise satisfactory carbon emission restrictions. Even if such measures are by no means a given in either the European Union or the United States, in the European Union the possibility to apply them has deliberately been left open in the climate decisions of December 2008. In the United States, border adjustments are part of legislative proposals on the table, including the Waxman bill.

The most probable measure at this point in time would seem to be an obligation for importers from certain countries to buy emission rights for carbon emitted during the production of goods they intend to sell on the market of the countries imposing the obligation, which have (in the case of the European Union) or intend to have (in the case of the United States) a cap-and-trade system in place themselves. Such measures are considered in order to counter

the risk of carbon leakage (simply put: the increase of emissions elsewhere because of investments in new production facilities being made outside the cap-and-trade system in order to avoid costs imposed by that system) and loss of competitiveness (loss of market share as a result of extra costs incurred by producers inside the cap-and-trade system vis-à-vis producers outside). They are also considered by some as a possible incentive to encourage other countries into agreeing to curb their emissions, even if others argue they send the wrong signal to developing countries. Finally, some consider border adjustment measures as politically necessary to make the introduction of a cap-and-trade system acceptable to domestic industry and the general public.

This article looks at potentially relevant case law of the World Trade Organization (WTO), partly building upon earlier work on this topic by the same author.<sup>1</sup> A series of caveats need to be made immediately: I am not implying that WTO consistency of any border adjustment measure considered is *per se* a decisive consideration in the debate. Nor do I intend to take position on the desirability of such measures. The fact is, as said, that major players are considering such measures and that there is substantial uncertainty as to how such measures would be assessed under WTO rules, if they were to be tested under those rules. It may help, therefore, to have a close look at how a number of “trade and environment” disputes have been handled by the WTO dispute settlement mechanism. In particular, I propose to look at the following

issues: first, how the interplay between multilateral and unilateral action was dealt with in the two *US-Shrimp* cases.<sup>2</sup> Second, how the Appellate Body seems to have relaxed the justification for human health measures under Article XX of the General Agreement on Tariffs and Trade (GATT) in the *Brazil-Tyres* dispute, and has made suggestions as to the justifiability of climate change measures.<sup>3</sup> And third, how the link between discriminatory application of a measure between countries where the same conditions prevail and its justifying environmental objective was treated, again in *Brazil-Tyres*.

The reader will remark that these issues are all about the interpretation of GATT Article XX, the article WTO Members have to resort to when they seek to justify a measure that otherwise infringes substantive GATT provisions. It should be noted that GATT Article XX only comes into the picture when such an infringement has indeed been observed. This is an element that is sometimes overlooked, but it is by no means insignificant. Trade-related climate policy measures, such as the application of an obligation on importers to buy emission rights, do not automatically or necessarily infringe a substantive GATT provision, such as the national treatment and most-favoured-nation (MFN) obligations. National treatment obliges WTO Members not to treat imports less favourably than similar domestic products in terms of taxation or regulations, while MFN

obliges Members not to treat imports from one exporting Member less favourably than similar exports from any other country.

***“An imposition to buy emission rights may indeed be consistent with the national treatment obligation”***

Any trade-related climate policy measure will first need to be assessed in order to decide whether there is such an infringement. A particularly interesting debate can be held in this respect on the interpretation of the national treatment clause for regulatory purposes in GATT Article III.4. Indeed, I argue that if a number of conditions are met, such an imposition to buy emission rights may indeed be consistent with the national treatment obligation. Nevertheless, I have chosen to concentrate this contribution on Article XX, since I see basically no escape from infringement of the MFN clause in GATT Article I; whether importers need to buy emission rights will depend on whether they are exporting from a country deemed to be applying comparable or otherwise satisfactory emission restrictions. In other words, the debate will in all probability concentrate on Article XX because the MFN infringement will need to be justified, whether there is a national treatment violation or not.

## 2. Unilateral action and multilateral negotiations

Is there a “duty” for WTO Members to search for multilateral agreement on tackling cross-border and global environmental problems before resorting to unilateral measures? This is a relevant question in light of the possibility

that one or more WTO Members may take unilateral measures against imports from countries not willing to join a post-2012 climate agreement, or countries that are deemed not to take on satisfactory emission abatement



commitments. Such measures might be prepared in parallel to the negotiations on a future climate agreement.

First of all, there is neither an agreed definition of “unilateral measures” in the WTO context, nor is there in general public international law, where the term “unilateral” is neutral.<sup>4</sup> Any measure applied by a state and not mandatorily prescribed by an international agreement may be dubbed “unilateral”. Whether a “unilateral” measure is consistent or inconsistent with public international law will obviously depend on the type of measure and on the international rules applying to it. Therefore, general statements to the effect that “unilateral action” is “illegal” are meaningless. And although there is a growing body of public international law stipulating that multilateral approaches to environmental problems are to be preferred over unilateral approaches (Rio Declaration, Agenda 21, among others), this does not mean that unilateral approaches are illegal *per se*.

In the *US-Shrimp* case, Malaysia, India, Pakistan and Thailand challenged a US import prohibition of shrimp from countries not certified by US authorities as taking satisfactory measures to ensure turtles were not killed in shrimp fishing—satisfactory to US authorities, that is. The WTO Appellate Body report in that dispute caused some

controversy as to the need to negotiate multilaterally before resorting to unilateral measures. The Appellate Body spoke of the “failure to have *prior consistent recourse to diplomacy* as an instrument of environmental protection policy” of the United States.<sup>5</sup> In the Appellate Body’s view, the US Congress itself had expressly recognized the importance of securing international agreements for the protection of sea turtles. However, US authorities had only engaged in negotiations with a number of South American countries. The resulting Inter-American Convention, the Appellate Body said, demonstrated the conviction of its signatories, including the United States, that consensual and multilateral procedures were available and feasible for the conservation of sea turtles; an alternative course of action was reasonably open to the United States, other than the unilateral procedures of the import prohibition, the heaviest “weapon” in a Member’s armoury of trade instruments.<sup>6</sup> Finally, the Appellate Body noted that the United States negotiated with some, but not with other Members, and that the effect was discriminatory and unjustifiable, thereby not meeting the requirements of the “chapeau” of GATT Article XX (see Box 2).<sup>7</sup>

### **Box 2. GATT Article XX**

“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 contracting party of measures:

...

(b) necessary to protect human, animal or plant life or health; ...

(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption; ...”.

Malaysia challenged the US implementation of the Appellate Body report. The implementation panel went even further than the original Appellate Body report as regards the need to negotiate internationally:

“In a context such as this one,... the possibility to impose a unilateral measure to protect sea turtles under Section 609 is more to be seen, for the purposes of Article XX, as the possibility to adopt a provisional measure allowed for emergency reasons than as a definitive ‘right’ to take a permanent measure.”<sup>8</sup>

In a further ruling in the same dispute, the Appellate Body elaborated its vision on the duty to negotiate internationally. It found that the United States would be expected to make good faith efforts to reach international agreements. In other words, comparable efforts, resources and energies must be devoted to the negotiations.<sup>9</sup> The Appellate Body stressed that there had been an obvious disparity in efforts to negotiate in the original dispute, amounting to unjustifiable discrimination. It then condoned the implementation panel’s analysis that the subsequent efforts by the United States to negotiate with other countries and regions were sufficiently comparable to the Inter-American negotiations to conclude that there was no longer unjustifiable discrimination.<sup>10</sup>

Of course we are not talking about sea turtles here, nor are we talking about an import prohibition. Nonetheless, might this dispute tell us anything about what to anticipate in terms of expectations of good faith international negotiation efforts?

First of all, the Appellate Body started off with rather sweeping statements about the need to seek multilateral solutions, but in the end based its finding that there was unjustifiable discrimination mainly on the fact that the United States negotiated with some but not with other countries. Thus it left open the

question whether the findings would have been the same if the United States had not negotiated with any country at all: arguably, the unjustifiable discrimination would have been much less obvious in that case. Additionally, the language on the Inter-American Convention demonstrating that the United States had an alternative to the heavy weapon of an import prohibition hardly fits into the chapeau analysis of Article XX. It reminds one mostly of the analysis made when interpreting “necessary” in Article XX(b) (and (d)).<sup>11</sup> But the relevant subparagraph in *US-Shrimp* actually was XX(g), which does not even include a necessity requirement, only a weaker test: “relating to the conservation of exhaustible natural resources”.

Be that as it may, the *US-Shrimp* situation involved negotiations with some, not with others. It does not resolve the basic question of what is expected from a State enacting a unilateral trade-restrictive measure without negotiating internationally. But most importantly, the question is what the Appellate Body report in *US-Shrimp* could teach us for the climate negotiations, where most states are involved in the United Nations Framework Convention on Climate Change (UNFCCC) process, but the biggest emitters also discuss climate issues in the Major Economies Forum on Energy and Climate (MEF) and other multilateral arenas. States not present in the MEF could argue that the MEF Members are not devoting efforts, resources and energy to them.

Second, even if climate change is a global problem *par excellence*, regional agreements, which played a major role in *US-Shrimp*, might not be totally irrelevant. Is it really tenable that, as a general rule, a WTO Member is required to devote roughly the same amount of “efforts, resources and energies” to negotiating an agreement with all third parties? If a Member concludes an environmental agreement or sets environmental standards together with other Members it cooperates structurally with,

should that set the standard for negotiations with the rest of the world? Should there not be room for intensified environmental cooperation in regional agreements, comparable to intensified trade liberalization under GATT Article XXIV, which allows for the negotiation of regional agreements?<sup>12</sup> If the European Union links its partners of the European Economic Area to its emissions trading system (ETS) and excludes their exports to the European Union from a carbon adjustment obligation, does that

mean it must devote similar efforts to including all WTO Members into its ETS? Or similarly, if the United States agrees to set up a cap-and-trade system with Canada and Mexico, should it devote the same negotiating energy to letting the rest of the world join? This hardly seems a reasonable requirement. The relationship between Articles XX and XXIV must be further explored, also in the environment and climate context.<sup>13</sup>

### 3. Justification for climate change measures under GATT Article XX

The Appellate Body's findings in the recent *Brazil-Tyres* case might provide some additional insight into the justifiability of climate change measures. The dispute between the European Communities and Brazil was about whether a Brazilian prohibition to import retreaded tyres was justified by human health objectives, and about whether an exemption to the import prohibition for retreaded tyres from MERCOSUR countries met the GATT requirements. Brazil argued that retreaded tyres posed a greater risk of ending up as garbage than new tyres, while dumped tyres also help spread diseases. It invoked GATT Article XX(b) to justify the import prohibition. The Appellate Body applied a rather loose test when interpreting the "necessary" requirement in Article XX(b). It can be argued that this is irrelevant to climate change measures, which will not necessarily or primarily be aimed at human health protection and therefore will not be justified under paragraph (b) of GATT Article XX. However, *Brazil-Tyres* may still contain valuable insights as to the way the Appellate Body views justifications for not only health protection measures in a narrow sense, but also environmental measures more generally

***“The Appellate Body thought it useful to refer explicitly to climate change measures even in a dispute that was not itself relevant to climate change”***

and climate change measures in particular. After all, the Appellate Body thought it useful to refer explicitly to climate change measures even in a dispute that was not itself relevant to climate change.<sup>14</sup>

Moreover, the paragraph of Article XX most likely to be invoked to justify climate change measures, paragraph (g), does not contain a "necessary" requirement but rather a laxer requirement that the measure should be "relating to" its objective. Thus, if the Appellate Body has loosened its "necessary" test and in the same case refers to climate change, there is at least a suspicion that it would also look benignly at climate change measures under Article XX. Briefly, the elements in the *Brazil-Tyres* decision that are in my view potentially relevant to climate change measures are:

- The fact that the Appellate Body encourages future panels to take a "holistic approach" when determining what is the measure at issue in a dispute.<sup>15</sup> The determination of the relevant measure is of great importance in a WTO dispute. By suggesting panels should take a "holistic approach", the Appellate

Body implies that the whole of a country's policy responses may be taken into account when a measure with trade implications is singled out in a WTO procedure. The Appellate Body confirms this by underlining that the Brazilian measure (an import ban) must be viewed in the broader context of a comprehensive strategy.<sup>16</sup>

- The fact that the Appellate Body says that when a measure is strongly trade-restrictive, it would be difficult for a panel to find that measure necessary. A panel could only do so if it finds the measure apt to make a material contribution to the achievement of its objective.<sup>17</sup> This begs the question whether the requirement of a (potential) material contribution to the objective may be less stringently interpreted when one is dealing with a less trade-restrictive measure, i.e. no import bans but, for instance, a discriminatory internal tax or regulation such as an obligation for importers to buy emission rights (infringing MFN and/or national treatment).
- The fact that the Appellate Body itself goes further by stating that an import *ban or another trade-restrictive measure*, the contribution of which is not immediately observable, can still be justified under Article XX(b). According to the Appellate Body, certain complex health *or environmental* problems may be tackled only by a comprehensive policy, and the results obtained from certain actions, such as measures adopted to attenuate *global warming and climate change*, can only be evaluated with the benefit of time. Thus, a panel might conclude that an import ban is necessary on the basis of a demonstration that it is apt to produce a material contribution to the achievement of its objective. Such demonstration could consist of quantitative future projections or qualitative reasoning based on hypotheses tested and supported by sufficient evidence.<sup>18</sup>
- The fact that, when assessing possible alternatives in the context of the “necessary” requirement, the Appellate Body is not ready to assume that one element of a comprehensive strategy could be substituted. Such replacement could weaken the policy and its total effect by reducing synergies between its components.<sup>19</sup>
- Finally, the fact that the Appellate Body again speaks of “holistic”, this time when it calls the “weighing and balancing”, i.e. the process of considering all relevant factors in interpreting “necessary”, a “holistic operation”. As mentioned above, for a trade-restrictive component of a wider climate change policy, it is more probable that Article XX(g) is invoked than Article XX(b). However, the latter may still be relevant: the country invoking paragraph (g) may also invoke paragraph (b) since climate change measures are also taken to protect human life and health, not just natural resources. Moreover, if interpreting “necessary” should be considered a “holistic operation”, maybe the same goes for interpreting “relating to” in paragraph (g).

#### 4. Arbitrary or unjustifiable discrimination between countries where the same conditions prevail—the link with the objective of the measure

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The Appellate Body goes to some length in *Brazil-Tyres* to make the point that there is arbitrary or unjustifiable discrimination in the sense of the chapeau of Article XX: a) when the measure is applied in a discriminatory manner between countries where the same conditions prevail, and b) when the reasons given for this discrimination bear no *rational connection* to the objective falling within the purview of a paragraph of Article XX, or would go against that objective.<sup>20</sup> The Appellate Body makes this point so forcefully that one may expect it to build further upon it in future disputes.

This raises interesting questions with regard to possible trade-restrictive climate change measures. For instance, suppose a country applies a carbon adjustment tax or regulatory obligation to buy emission rights for imports from countries depending on whether they take on climate change abatement commitments or not. Such a measure will almost certainly infringe MFN obligations, and possibly national treatment obligations. What about the chapeau of Article XX? Is the discriminatory application of the measure not a problem because the same conditions do not prevail in the different exporting countries? This would seem to be the first line of argument that a defending country taking the measure would adopt. However, things become more complicated when, for instance, exemptions are made for goods from countries having a cap-and-trade system in place comparable to that in the importing country, while other exporting countries have no cap-and-trade system but have regulatory restrictions on emissions or other ways to curb emissions of its industry. In this case, the answer to the question whether the same conditions prevail in the countries that are compared to each other becomes less clear-cut.

In addition, the country defending the measure could argue that its discriminatory application bears rational connection to the objective of fighting climate change. This would raise the question what a “rational connection” is. The defendant could argue that it is discriminating precisely because of its climate change objective; it hopes to ensure that products from countries not imposing climate change costs on their industries do not have an unfair advantage in its markets and that no greenhouse gas emissions-intensive industries move to those countries. The rational connection would be that the discrimination actually contributes to the objective. However, there may be counter-arguments. For example, what if an exporting country confronting such border measures simply redirects its exports to importing countries not imposing border measures? Would the claim of “rational connection” be weakened?

Another thorny issue is the inclusion of exports from the defendant into an adjustment scheme that would entitle them to a rebate (tax adjustment or rendering of allowances) to make up for the extra costs incurred to meet climate change requirements. This would not only be a subsidy whose WTO-consistency could be challenged, but could also possibly amount to a national treatment violation, and it may be hard to demonstrate a rational connection between the discriminatory application of that measure (which seems *per se* discriminatory) and the environmental objective. Unless, that is, a dispute panel or the Appellate Body would be ready to accept that the competitiveness and level playing field arguments behind such export rebates are environmentally relevant as well, as they play a role in promoting local production.

Finally, a word on an issue that has always been present in the GATT rules but may surface in a possible dispute involving climate change measures; the question of whether the assessment of the discriminatory nature of a measure (MFN under Article I, or national treatment under Article III) and the assessment of discriminatory application of the measure under the chapeau of Article XX will not at some point involve a doubling of the analysis, even if partially. It would seem that in more complicated so-called *de facto* discrimination cases, it would be more difficult to keep the objective of the measure completely out of the discrimination analysis under Article I or III. For instance, in complex national treatment disputes dealing with *de facto* discrimination, the Appellate Body has suggested that the treatment of groups of imported products should be compared to that of groups of domestic products instead of merely comparing the treatment of individual products.<sup>21</sup> The examination of the regulatory distinctions made by the country taking the measure will in such cases arguably involve the reasons for such regulatory distinctions.

Without getting into the “aim and effect” discussion, I would like to point out that given the strong link the Appellate Body now makes between the objective of a measure and its discriminatory application, the doubling of the discrimination analysis looms large. Perhaps at some stage we will see an end to the strict separation of the discrimination analysis under the “substantive” GATT articles and the discriminatory application analysis under the Chapeau of Article XX. Moreover, if a measure’s discriminatory application needs to be rationally connected to its objective, it may become more and more difficult to disentangle the analysis of that rational connection under the Chapeau with the assessment of the measure’s objective under the subparagraphs of Article XX. We could thus possibly end up with a more “holistic” or integrated approach to a measure’s compatibility with the GATT, as we already find it in the more recent Agreement on the Application of Sanitary and Phytosanitary Measures and Agreement on Technical Barriers to Trade.

## 5. Conclusion

The WTO’s “trade and environment-*acquis*” has evolved over the past 15 years in a number of landmark trade and environment disputes, but it has by no means stopped evolving and there are still important questions to be answered. Trade and climate issues may put those questions on the forefront. That goes for the relationship between unilateral action and multilateral efforts, for the relationship between the general exceptions in GATT Article XX and the exception for regional agreements in Article XXIV, for the interpretation of the causal link required to justify environmental measures under Article XX(b) and, by implication, XX(g). But most importantly, the Appellate Body in *Brazil-Tyres* may have opened the road

to challenging some of the “conventional wisdom” on the role of discrimination and its relationship to a measure’s objectives and on the separation of the analysis of a measure’s discriminatory application under substantive GATT provisions like Articles I and III, under the paragraphs of Article XX and under the Chapeau of Article XX.

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## Endnotes

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<sup>1</sup> See in particular Wiers, J. (2002). *Trade and Environment in the EC and the WTO*, Europa Law Publishing, Groningen; and Wiers, J. (2008). French Ideas on Climate Policy, *Carbon and Climate Law Review* 2(1), 18-32.

<sup>2</sup> WT/DS58, US-Import Prohibition of Certain Shrimp and Shrimp Products (complainants: India, Malaysia, Pakistan, Thailand), Panel and Appellate Body Report (hereinafter “US-Shrimp Appellate Report”) and WT/DS58/RW, Panel and Appellate Body Implementation Report (hereinafter “US-Shrimp Implementation Report”). All disputes available at <http://www.wto.org>.

<sup>3</sup> WT/DS332, Brazil-Measures Affecting Imports of Retreaded Tyres (complainant: European Communities), panel and Appellate Body report (hereinafter “Brazil-Tyres Appellate Report”).

<sup>4</sup> On the concept of “unilateralism” in public international law, with particular reference to trade and environment issues, see the special issue of the *European Journal of International Law* 11(1) (2000).

<sup>5</sup> US-Shrimp Appellate Report, supra note 2 at para. 167 (emphasis added).

<sup>6</sup> *Ibid*, para. 170.

<sup>7</sup> *Ibid*, para. 172.

<sup>8</sup> US-Shrimp Implementation Report, supra note 2, para. 5.88.

<sup>9</sup> *Ibid*, para. 122.

<sup>10</sup> *Ibid*, paras. 128-133.

<sup>11</sup> On the interpretation of “necessary” in Article XX(b) as a “weighing and balancing test”, see e.g. the Brazil-Tyres Appellate Report, para. 178: “in order to determine whether a measure is ‘necessary’ within the meaning of Article XX(b) of the GATT 1994, a panel must consider the relevant factors, particularly the importance of the interests or values at stake, the extent of the contribution to the achievement of the measure’s objective, and its trade restrictiveness. If this analysis yields a preliminary conclusion that the measure is necessary, this result must be confirmed by comparing the measure with possible alternatives, which may be less trade restrictive while providing an equivalent contribution to the achievement of the objective. This comparison should be carried out in the light of the importance of the interests or values at stake”.

<sup>12</sup> GATT Article XXIV: “the provisions of this Agreement shall not prevent, as between the territories of contracting parties, the formation of a customs union or of a free-trade area .... Provided that:

- (a) with respect to a customs union ... the duties and other regulations of commerce imposed at the institution of any such union in respect of trade with contracting parties not parties to such union shall not on the whole be higher or more restrictive than the general incidence of the duties and regulations of commerce applicable in the constituent territories prior to the formation of such union;
- (b) with respect to a free-trade area ... the duties and other regulations of commerce maintained in each of the constituent territories and applicable at the formation of such free-trade area to the trade of contracting parties not included in such area shall not be higher or more restrictive than the corresponding duties and other regulations of commerce existing in the same constituent territories prior to the formation of the free-trade area”.

<sup>13</sup> The relationship between GATT Articles XX and XXIV is somewhat unclear, as witnessed by the Brazil-Tyres dispute, where the question arose whether an exemption to an import ban for the members of a regional agreement was compatible with GATT Article XX and its chapeau. See in particular Brazil-Tyres Appellate Report, para. 234 and note 445.

<sup>14</sup> Brazil-Tyres Appellate Report, para. 151: “certain complex public health or environmental problems may be tackled only with a comprehensive policy comprising a multiplicity of interacting measures. In the short-term, it may prove difficult to isolate the contribution to public health or environmental objectives of one specific measure from those attributable to the other measures that are part of the same comprehensive policy. Moreover, the results obtained from certain actions—for instance, measures adopted in order to attenuate global warming and climate change ... can only be evaluated with the benefit of time”.

<sup>15</sup> Brazil-Tyres Appellate Report, para. 126.

<sup>16</sup> *Ibid*, para. 154.

<sup>17</sup> *Ibid*, para. 150.

<sup>18</sup> *Ibid*, para. 151, emphasis added. The terms “qualitative reasoning” and “sufficient evidence” are not further defined

<sup>19</sup> *Ibid*, para. 172.

<sup>20</sup> *Ibid*, para. 227.

<sup>21</sup> See the famous *obiter dictum* of the Appellate Body in para. 100 of its report in the *EC-Asbestos* dispute, WT/DS135.











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