

# The multilateral trading system and climate change

## I. Introduction

Climate change is the biggest sustainable development challenge the international community has had to tackle to date. Measures to address climate change need to be fully compatible with the international community's wider ambitions for economic growth and human advancement. It is a challenge that transcends borders and requires solutions not only at national levels but at the international level as well.

The WTO is one part of the architecture of multilateral cooperation. It provides a framework of disciplines to facilitate global trade and serves as a forum to negotiate further trade openness. Freer trade is not an end in itself; it is tied to crucially important human values and welfare goals captured in the WTO's founding charter, the Marrakesh Agreement. Among these goals are raising standards of living, optimal use of the world's resources in accordance with the objective of sustainable development, and protection and preservation of the environment.

The issue of climate change, per se, is not part of the WTO's ongoing work programme and there are no WTO rules specific to climate change. However, the WTO is relevant because climate change measures and policies intersect with international trade in a number of different ways.

First, trade openness can help efforts to mitigate and adapt to climate change, for example by promoting an efficient allocation of the world's resources (including natural resources), raising standards of living (and hence the demand for better environmental quality) and improving access to environmental goods and services.

Second, the WTO is relevant because national measures to mitigate and adapt to climate change may have an impact on international trade (as they may modify conditions of competition) and may be subject to WTO rules. The WTO "tool box" of rules can be relevant, therefore, to the examination of climate change measures. Moreover, WTO rules, as a whole, offer a framework for ensuring predictability, transparency and the fair implementation of such measures.

## II. The impact of trade opening on climate change

### A. Expansion of international trade

The past half century has been marked by an unprecedented expansion of international trade. Since 1950, world trade has grown more than twenty-seven fold in volume terms. By way of comparison, the level of world GDP rose eight-fold during the same period. As a consequence, the share of international trade in world GDP has risen from 5.5 per cent in 1950 to 20.5 per cent in 2006.

A number of factors have given rise to this spectacular expansion in world trade. Foremost is technological change, which has considerably reduced the cost of transportation and communications. In the second half of the 20th century, the introduction of the jet engine and containerization significantly reduced the cost of air and maritime transportation, thereby expanding the range and volume of goods that are traded. The information technology revolution has made it easier to trade and to coordinate production of parts and components of a final good in different countries.

A second factor is more open trade and investment policies. Countries have opened up their trade regimes unilaterally, bilaterally, regionally, and multilaterally. Measures that taxed, restricted or prohibited trade have either been eliminated or reduced significantly. These changes in economic policies have not only facilitated trade, they have also broadened the number of countries participating in global trade expansion. In particular, developing

countries now account for 36 per cent of world exports, about double their share in the early 1960s.

Thus, technological innovations and changes in trade and investment policies have both democratized trade and made it easier to “unbundle” production. The parts and components that make up the final product can be manufactured in different locations around the globe. Many of these manufacturing plants are located in developing countries that, in turn, have become increasingly integrated in global supply chains. Compared to the past, more trade can be embodied in the manufacture of a final product and more countries can be involved in the process.

The expansion of world trade may be one reason why trade is increasingly being raised in climate change discussions and may also help to explain why there are concerns about the impact of trade on greenhouse gas emissions. But to what extent are the concerns justified?

### **B. How does trade affect greenhouse gas emissions?**

Trade economists have developed a conceptual framework for examining how trade opening can affect the environment. This framework, first applied to study the environmental impact of the North American Free Trade Agreement (NAFTA), separates the impact of trade liberalization into three independent effects: scale, composition and technique. This framework can be used therefore to study the link between trade opening and climate change.

The “scale” effect refers to the impact on greenhouse gas emissions from the increased output or economic activity resulting from freer trade. The general presumption is that trade opening will increase economic activity and hence energy use. Everything else being equal, this increase in the scale of economic activity and energy use will lead to higher levels of greenhouse gas emissions.

The “composition” effect refers to the way that trade liberalization changes the mix of a country’s production towards those products where it has a comparative advantage. This re-allocation of resources within a country is how trade improves economic efficiency. The effect on greenhouse gas emissions will depend on the sectors in which a country has comparative advantage. The composition effect will result in less greenhouse gas emissions if the expanding sectors are less energy intensive than the contracting sectors. Whether the composition effect results in higher or lower greenhouse gas emissions is therefore difficult to predict in advance.

Finally, trade opening can lead to improvements in energy efficiency – the “technique” effect – so that the production of goods and services generates less greenhouse gas emissions. This decline in emission intensity can come about in two ways. First, freer trade will increase the availability and lower the cost of environmentally-friendly goods, services and technologies. This is particularly important for countries that do not have access to these goods, services and technologies or whose domestic industries do not produce them in sufficient scale or at affordable prices. For exporters, additional market access can provide incentives to develop new products, services and technologies to mitigate climate change. Second, the increase in income that trade brings about can lead society to demand better environmental quality – in other words, less greenhouse gas emissions.

Since the scale and technique effects tend to work in opposite directions, and the composition effect depends on the comparative advantage of countries, the overall impact of trade on greenhouse gas emissions cannot be determined in advance. It will depend on the magnitude or strength of each of the three effects.

The technique effect reflects the principal avenue through which trade opening can help mitigate climate change, hence the importance of the current Doha Round and in particular the negotiations to liberalize environmental goods and services. By increasing the

availability of goods, services and technologies that are likely to be important in improving energy efficiency, trade can help to meet the challenge of global warming.

### C. Trade and transport

One concern about trade's role in greenhouse gas emissions is its link to transportation services. International trade involves countries specializing in and exporting goods in which they have a comparative advantage and importing other goods from their trade partners. This process of international exchange requires that goods be transported from the country of production to the country of consumption. So international trade expansion is likely to lead to increased use of transportation services.

Petroleum supplies 95 per cent of the total energy used by world transport – making it a significant source of greenhouse gas emissions. The International Energy Agency (IEA) has estimated that, in 2004, transport was responsible for 23 per cent of world energy-related greenhouse gas emissions. But there are important differences in the contribution of various modes of transport. About 74 per cent of energy-related CO<sub>2</sub> emissions in the transport sector comes from road transport with another 12 per cent from air transport.

Since the International Maritime Organization estimates that around 90 per cent of global merchandise trade by volume is transported by sea, and the bulk of CO<sub>2</sub> emissions in the transport sector comes from road transport, international trade does not seem to play a major role in the generation of emissions from the transport sector. The IEA's 2007 study on CO<sub>2</sub> emissions from fuel combustion suggests that international marine transport generates about 8.6 per cent of the emissions of the transport sector.

In the context of the carbon footprint of international transportation, “food miles” is an emerging concept that involves the calculation of CO<sub>2</sub> emissions associated with the transport of food over long distances to arrive at the final consumer. Therefore, some advocate that products should be sourced as much as possible locally and that labels of food products should include information on the origin of the product.

However, the real “carbon footprint” of domestically produced versus imported foodstuffs is very complex. Transport mode (air, road, maritime or rail) and distance are not the only significant contributors to CO<sub>2</sub> emissions. Life cycle of the products, including production methods (e.g. heated greenhouses vs. open-air production; energy-intensive modern techniques vs. hand labour) also plays a big part.

Indeed, some studies conducted on the “carbon mileage” of traded goods have shown that the effect can be the opposite of what is commonly believed. For instance, it has been argued that Kenyan flowers air-freighted to Europe would generate less CO<sub>2</sub> emissions than flowers grown in the Netherlands; or New Zealand lamb transported to the United Kingdom would generate 70 per cent less CO<sub>2</sub> than lamb produced in the United Kingdom. Therefore, food miles may be an issue in need of case-by-case analysis, and empirical verification.

### III. Activities of the WTO and the challenge of climate change

In the Marrakesh Agreement establishing the WTO, members established a clear link between sustainable development and disciplined trade liberalization – in order to ensure that market opening goes hand in hand with environmental and social objectives. In the ongoing Doha Round, members went further in their pledge to pursue a sustainable development path by launching the first ever multilateral trade and environment negotiations.

Aimed at furthering trade opening, a number of aspects of the Doha Round have a direct bearing on sustainable development and can therefore contribute positively to efforts to mitigate and adapt to

climate change. As well, WTO's regular work provides a platform for addressing the linkages between trade and climate change.

## **A. Negotiations on environmental goods and services**

### **1. Liberalizing environmental goods**

Under the ongoing negotiations on mutual supportiveness of trade opening with the environment, WTO members are working to eliminate trade barriers in the goods and services that can benefit the environment. Facilitating access to products and services in this area can help improve energy efficiency, reduce greenhouse gas emissions and have a positive impact on air quality, water, soil and natural resources conservation. A successful outcome of the negotiations on environmental goods and services could deliver a triple-win for WTO members: a win for the environment, a win for trade and a win for development.

Environmental goods can cover a number of key technologies that may contribute positively to the fight against climate change. Reducing or eliminating import tariffs and non-tariff barriers in these types of products will reduce their price and make them more accessible. Increased competition will foster technological innovation in areas related to protection of the environment and combating climate change. According to a recent World Bank study on trade and climate change, elimination of both tariffs and non-tariff barriers to clean technologies could result in a 14 per cent increase in trade.

To illustrate, the Intergovernmental Panel on Climate Change has identified a range of mitigation and adaptation technologies that can assist in the challenge of climate change. Many of these technologies involve products currently being negotiated in the Doha negotiations. These include wind and hydropower turbines, solar water heaters, tanks for the production of biogas, and landfill liners for methane collection. A submission by the European Communities and the United States in December 2007 proposes to give priority in the WTO negotiations to climate-friendly goods and to services linked to addressing climate change. These climate-friendly products comprise about one-third of the environmental goods already identified by a group of delegations.

### **2. Liberalizing environmental services**

In the negotiations on environmental services, WTO members are seeking GATS specific commitments on activities which may be directly relevant to policies aimed at mitigating climate change.

During the Uruguay Round, negotiations focused on sewage services, refuse disposal services and sanitation services, which are listed in the environmental services sector of the Services Sectoral Classification List (MTN.GNG/W/120). Other environmental services, which are commonly understood to be covered by the category "Other" in this list, attracted limited attention at the time. Among them, services such as "cleaning of exhaust gases" and "nature and landscape protection services" are directly relevant to climate change mitigation measures. Cleaning of exhaust gases includes emission monitoring and services aiming to control and reduce the level of pollutants in the air, whether from mobile or stationary sources, which are mostly caused by the burning of fossil fuels. Nature and landscape protection services entail various services aimed at protecting ecological systems as well as studies on the inter-relationships between environment and climate.

In recent years, these "other" environmental services have expanded as a consequence of increasingly demanding environmental regulations and have gained in prominence both from an environmental and economic point of view. They are supplied mainly on a business-to-business basis and offer niche markets for small and medium-sized enterprises. These services are now on the negotiating table and should offer good prospects for new GATS commitments.

### 3. Negotiations on MEAs/WTO relationship

WTO members are currently discussing ways to ensure a harmonious co-existence between WTO rules and specific trade obligations in various agreements that have been negotiated multilaterally to protect the environment. Given the present consensus in the international community for multilateralism and concerted actions to combat climate change, the importance of these negotiations aimed at a harmonious relationship between trade and environment regimes cannot be overemphasized.

While, up to now, there has been no evidence of conflict between the trade and environmental regimes, a successful outcome to these negotiations will nevertheless reinforce the relationship between the two legal regimes. The negotiators have drawn from national experiences in the negotiation and implementation of multilateral environmental agreements (MEAs) at the national level. They are seeking ways to improve national coordination and cooperation in this respect. Such mechanisms may be central to the success of climate change mitigation and adaptation efforts undertaken at national and international levels.

Moreover, it is clear from the rules of the WTO and the UN Framework Convention on Climate Change (UNFCCC) that both regimes do not operate in isolation. First, Article 3.5 of the UNFCCC and Article 2.3 of the Kyoto Protocol provide that measures taken to combat climate change should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade and should be implemented so as to minimize adverse effects, including on international trade, and social, environmental and economic impacts on other Parties. Moreover, WTO rules leave sufficient policy space to accommodate under certain conditions the use of trade measures to protect the environment.

At the inter-institutional level, members are also exploring ways of enhancing information exchange and cooperation between the WTO and MEA secretariats. Concrete elements are being discussed to improve or complement existing practices and cooperation mechanisms. This information exchange extends to participation in respective meetings and also to the organization of information exchange sessions and joint technical assistance and capacity-building activities. Cooperation is already taking place between the WTO and climate change bodies. The UNFCCC participates in meetings of the WTO Committee on Trade and Environment (CTE) and is an ad hoc observer to the Committee overseeing the specific trade and environment negotiations (CTESS). The WTO Secretariat attends UNFCCC Conference of Parties meetings.

#### **B. Agricultural and non-agricultural negotiations**

Some benefits to climate change mitigation and adaptation, albeit indirectly, may result from the negotiations on agriculture and market access for non-agricultural goods. First, the elimination of tariff and non-tariff barriers and a reduction in agricultural support in developed countries may lead to a more efficient allocation of global resources and production.

Second, trade negotiations will lead to increased trade opportunities for developing countries which could lead to important income gains for these countries. Increased incomes may enable poorer countries to reduce their vulnerability to the effects of climate change by investing in irrigation, for example. In the longer term, the enhanced predictability associated with WTO commitments from the Doha Round, and associated monitoring and surveillance activities, could help to offset the less predictable shifts in weather and productivity. This will ensure that developing countries do not suffer disproportionately from the negative impacts of climate change.

The challenge of climate change has also contributed to the development of the biofuel sector, as many countries see that biofuels can assist them in meeting their reduction commitments for greenhouse gas emissions under the Kyoto Protocol. Since the production of biofuels is

concentrated mostly in the consuming countries, trade in biofuels is not currently very significant. Trade in biodiesel tends to take place between EU countries as production and consumption is currently concentrated in the EU. However, trade in bioethanol has been growing over the last few years, with Brazil emerging as the leading exporter. Since 2000, 37 measures on biofuels have been notified by 20 WTO members in the context of the Agreement on Technical Barriers to Trade.

HS classification of biofuels has implications on how WTO disciplines apply to domestic measures aimed at these products. Until recently, both biodiesel and bioethanol used to be traded as agricultural products. In 2005, the World Customs Organization decided to put "biodiesel" in Chapter VI on "products of chemical and allied industries" (HS 382490). Bioethanol is still traded under HS 2207 in Chapter 22 on "beverages, sprits and vinegar". Any outcome of the Doha negotiations on agriculture and non-agricultural market access will apply to the biofuels sector.

### C. Climate change issues in WTO's regular work

#### 1. The Committee on Technical Barriers to Trade (TBT Committee)

The TBT Committee provides an important forum to discuss technical regulations adopted by governments to mitigate climate change. Technical specifications and labelling requirements related to climate change are not new to the WTO. Indeed they fall squarely within the disciplines of the TBT Agreement which imposes, among other things, rules on avoidance of unnecessary obstacles to trade and harmonization. In addition, the TBT Agreement requires members to share information on technical regulations that may have an impact on trade.

In recent years, a number of product standards and labelling requirements targeted at energy efficiency or emissions control were notified. The climate change-related technical regulations discussed in the TBT Committee so far appear to principally concern product requirements. Examples of regulations discussed so far include: fuel economy standards for cars; eco-design requirements for energy-using products; energy efficiency programmes for consumer products and emission limit values for diesel engines.

The Committee looks at climate change measures to ensure they do not pose unnecessary obstacles to international trade, while still achieving the legitimate objective of protecting the environment, and encourages harmonization.

As for international standards, the International Organization for Standardization (ISO) has adopted four standards (14064 – 1, 2 and 3:2006 and 14065:2007) that include requirements for quantification and reporting of greenhouse gas emissions and reductions. These standards are related to conformity assessment procedures and do not include any product-specific requirements on emission levels.

An increasing number of private sector standards might include production or labelling requirements, with the stated objective of mitigating or adapting to the negative effects of climate change. Though non-mandatory, they may affect market access conditions for a range of products.

#### 2. The Committee on Trade and Environment (CTE)

The work programme of the Committee on Trade and Environment (CTE) covers the main issues at the intersection of trade and environment. A number of issues indirectly relating to climate change, such as the environmental benefits of removing trade restrictions in the energy and forestry sectors and the effect of energy efficiency labelling on market access, have been discussed in the CTE. The Committee serves as an incubator for ideas to advance the trade and environment agenda and is the main gateway should members decide to explore further the linkages between climate change and trade.

#### IV. Climate change and the potential relevance of WTO rules

In addition to regulatory measures, national, regional or multilateral initiatives to deal with climate change involve the adoption by governments of price-based measures such as taxes and tariffs, market-based mechanisms as well as a variety of other measures including subsidies. As they relate to trade, these measures may be subject to WTO rules and procedures. The design of climate change programmes and the pursuit of international cooperation in this field will need to take into account the potential trade impact of these measures and the relevance of members' rights and obligations under WTO rules.

Broadly speaking, WTO rules and jurisprudence (the WTO "tool-box" of rules) that relate generally to environmental issues (including GATT Article XX, the PPMs (processes and production methods) issue, and the definition of a like product) are relevant to the examination of climate change measures. The general approach under WTO rules has been to acknowledge that some degree of trade restriction may be necessary to achieve certain policy objectives as long as a number of carefully crafted conditions are respected. A number of WTO rules may be relevant to measures aimed at mitigating climate change. These include:

- disciplines on tariffs (border measures), essentially prohibiting members from collecting tariffs at levels greater than that provided for in their WTO scheduled consolidation.
- a general prohibition against border quotas.
- a general non-discrimination principle, consisting of the most-favoured-nation and national treatment principles.
- rules on subsidies.
- rules on technical regulations and standards, which may not be more restrictive than necessary to fulfil a legitimate objective. Technical regulations and standards must also respect the principle of non-discrimination and be based on international standards, where they exist. There are also specific rules for sanitary and phytosanitary measures which are relevant for agricultural products.
- disciplines relevant to trade in services, imposing general obligations such as most-favoured-nation treatment, as well as further obligations in sectors where individual members have undertaken specific commitments.
- rules on trade-related intellectual property rights. These rules are relevant for the development and transfer of climate-friendly technologies and know-how.