

E. Natural resources, international cooperation and trade regulation

This section discusses international regulation of trade in natural resources. It starts with an overview of the legal framework of the WTO and briefly addresses how natural resources fit within this. Rather than attempt an exhaustive treatment of every WTO rule that may have a bearing on trade in natural resources, this section sets out the rules that have particular relevance for this kind of trade, and considers whether, and to what extent, these rules respond to the salient characteristics of natural resource sectors. This section also presents a selection of international agreements that regulate trade in natural resources and discusses their relationship with WTO disciplines. It ends by focusing on a number of issues in this sector that appear to be of actual or potential relevance to international cooperation and to the multilateral trading system.

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1. Trade in natural resources and WTO rules

(a) Trade rules and natural resources

To the extent that a natural resource may be traded, it is covered by the obligations contained in the GATT and the other WTO agreements relating to trade in goods. This is the case, for example, of extracted coal and oil, lumber that has been cut down or marine species that have been caught. Conversely, WTO rules generally do not regulate natural resources before they are extracted or harvested.

Nevertheless, in some circumstances, WTO rules may have implications for products in their "natural" state. For example, in the *US – Softwood Lumber IV* dispute, one of the issues that arose was whether the provision by provincial governments of harvesting rights for timber at less than adequate remuneration could be considered a subsidy within the meaning of the Agreement on Subsidies and Countervailing Measures (SCM Agreement). More specifically, the question was whether the term "goods" as used in Article 1.1 of the SCM Agreement could include "trees before they are harvested, that is, standing timber attached to the land (but severable from it) and incapable of being traded as such" (Appellate Body Report, *US – Softwood Lumber IV*, para. 57). Ultimately, it was decided that there was no basis to exclude "tangible items – such as standing, unfelled trees – that are not both tradable as such and subject to tariff classification" from the scope of the term "goods" in Article 1.1 (Appellate Body Report, *US – Softwood Lumber IV*, para. 67).

The issue also arose in the North American Free Trade Agreement (NAFTA) with respect to a proposal for bulk water transfers from British Columbia (Canada) to the United States through diversion of the Canadian water flow. For environmental reasons, the government of British Columbia sought to pass legislation banning large-scale transfers of water. Quantitative bans on exports are arguably contrary to provisions of the NAFTA, to which both Canada and the United States are parties. However, before the legislation could be deemed to be inconsistent with the agreement, a threshold question is whether water in its natural state is covered by NAFTA. A useful starting point is the Harmonized Commodity Description and Coding Systems (often called the "HS"), which is a multipurpose international product nomenclature developed by the World Customs Organization.

The HS comprises several thousand commodity groups and has been used by WTO members in preparing their schedules of commitments (Ehring, 2007). Sub-heading 2201 of the HS is entitled "*Waters, including natural or artificial mineral waters and aerated water*", and explicitly lists "snow" and "ice", which could support the view that ground or surface water is covered by trade rules (Horlick, 2001). A contrary position is that, because sub-heading 2201 is

contained within the chapter of the HS entitled "*Beverages*", then water is only considered a product when it is destined for consumption. Because bulk transfers of ground or surface water are usually used for agricultural or industrial purposes, they would not be covered.

With a view to resolving the debate, the signatories to the NAFTA (Canada, Mexico and the United States) released a joint statement in 1993 proclaiming that "(t) he NAFTA creates no rights to the natural water resources of the parties to the Agreement". Although the legal status of this proclamation is unclear, it accords with views of those observers who consider that water does not become a good for the purposes of the NAFTA until it is removed from its natural state and transformed into a saleable commodity, such as bottled water (International Joint Commission, 1999; McRae, 2001; Cossy, 2005).

Similar issues also arise in relation to other natural resources. For example, members of the Organization of the Petroleum Exporting Countries (OPEC) have often imposed restrictions on production and asserted that such action is not inconsistent with the GATT because oil does not become subject to the disciplines of the WTO until it has been extracted. Some argue that the international law principle of sovereignty supports the proposition that nations are unrestrained in the manner in which they deal with their natural resources until they are mined, drilled or otherwise produced (Crosby, 2009). Even then, a distinction between measures affecting output and measures affecting trade bears relevance to the discussion.

A service relating to natural resources is subject to the disciplines of the General Agreement on Trade in Services (GATS) unless it is provided in the exercise of governmental authority. In practice, services relate to natural resources in many different ways, from management and protection, to exploration, exploitation, technical testing, transport, brokering and commercialization. A range of services directly concern natural resources (e.g. services incidental to mining, pipeline transportation of fuels, services incidental to agriculture, hunting and forestry, services incidental to fishing). Other services may relate to a variety of sectors, including natural resources (management consulting services, for instance).

No GATS provision specifically addresses natural resources and the application of GATS obligations depends to a large extent on WTO members' individual commitments in the sector concerned. The fact that the WTO system has different rules for trade in goods and trade in services raises complex questions in relation to the exploitation of natural resources and associated activities (see sub-section 3).

Box 25: Historical overview of natural resources in the GATT/WTO

The history of natural resources in the General Agreement on Tariffs and Trade (GATT) and the WTO is generally one of progressive market openness – to the point where a wide range of raw materials, from metals and minerals, to fuel and wood, today face little or no protection in most major markets. However, a number of resource-related issues remain or are becoming of major concern to some WTO members. One long-standing issue is the continued dependency of many developing countries on commodity exports, and the ways that supply fluctuations, market instability, price volatility and continued barriers to processed resources adversely affect the growth and development prospects of these countries.

Provisions for international commodity agreements (ICAs), the negotiation of the Generalized System of Preferences (GSP) granting preferential tariffs to imports from developing countries, aspects of special and differential treatment for developing countries and repeated efforts to tackle tariff escalation in successive trade negotiating rounds, were explicitly or implicitly aimed at addressing the unique challenges facing commodity-exporting countries and the perceived structural imbalances in the trading system.

Concerns about dependence on commodity exports and the adverse effects of market instability and declining prices pre-dated the creation of the GATT in 1948. The commodity price slump of the early 1920s, and more dramatically during the Great Depression of the 1930s convinced policy-makers of the need for greater international cooperation and management of commodities trade, culminating in efforts in the 1920s and 1930s to negotiate a series of ICAs aimed at stabilizing prices by controlling quantities produced and sold (typically involving the creation of buffer stocks, long-term purchase guarantees, and quantity and export restriction schemes).¹

These agreements figured prominently in the drafting of the ill-fated Havana Charter of 1948 and the GATT itself. Article 6 of the Charter permitted exceptions to non-discrimination for ICAs, provided that they were designed to encourage the stabilization of prices, the expansion of consumption and the relief of "burdensome" surpluses. The conditions governing the acceptable operation of such agreements were clearly spelled out: they should be negotiated at public conferences open to both consumers and producers of the commodity in question; they should last for a maximum of five years; and their operations should be jointly administered by producer and consumer interests.

With the failure to ratify the Havana Charter, the GATT was tasked with conducting an annual review of trends and developments in international pricing and with endorsing international commodity agreements (both in general and in specifics). Much later, with the addition of Part IV (Trade and Development) to the GATT in 1965, contracting parties were also tasked with devising measures to stabilize and improve conditions in world markets for the primary exports of developing countries in order to enable them to attain "stable, equitable and remunerative prices", and to provide them with expanding resources for economic development.

The success of ICAs, however, was mixed at best. With the exception of coffee and, for a time, tin, few managed to reverse declining price trends for the relevant commodities. Moreover, with the exception of the Tokyo Round's Bovine Meat and Dairy Products Arrangements, both of which were focused on developed-country producers, the GATT had little direct involvement in the design and operation of ICAs (Gordon-Ashworth, 1984).

A second major effort to address developing-country dependency on raw material exports came in the 1960s and 1970s. As early as 1958, the Haberler Report, prepared by a panel of experts commissioned by the GATT, argued that the needs of producers of primary products, and particularly those of developing countries, were "different to and distinct from those of producers of manufactured goods" and suggested that "existing rules and conventions concerning commercial policy were in general unfavourable to developing countries". During this same period, the ideas of Raul Prebisch (1950) and Hans Singer (1950) were increasingly influential – especially their contention that under-development was the result of structural inequalities in the international economic system, and in particular the declining terms of trade facing commodity-dependent developing countries. This analysis held considerable sway in intellectual and policy debate, but did not go uncontested (Viner, 1953; Baldwin, 1955; Johnson, 1967).

This "dependency theory" helped provide the intellectual foundations for the first United Nations Conference on Trade and Development (UNCTAD) in 1964. A key proposal at the Conference (endorsed at the second UNCTAD meeting in New Delhi four years later) was that developed countries should grant preferential tariff treatment to imports of manufactured and semi-manufactured products originating in developing countries – the so-called "Generalized System of Preferences" (GSP) – to encourage the growth of strong and diversified manufacturing sectors in poorer countries. A year later, the new Part IV of the GATT committed developed countries to "positive efforts designed to ensure that less-developed contracting parties secure a share of the growth in international trade commensurate with the needs of their economic development". Part IV also

included the principle that developed countries would not expect developing countries to reciprocate commitments to reduce or remove tariff and other trade barriers, and that "more favourable and acceptable conditions of access to world markets" should be provided for them.

In 1971, the GATT followed UNCTAD's lead and enacted two waivers to the most-favoured nation (MFN) principle (limited to ten years) which permitted tariff preferences to be granted to developing-country exports. In 1979, the GATT established a permanent exception to the MFN obligation by way of the Enabling Clause. This exemption allowed GATT contracting parties to establish systems of trade preferences for developing countries, with the caveat that these systems had to be "generalized, non-discriminatory, and non-reciprocal". Over a dozen WTO members offer GSP schemes and current efforts to formalize duty-free and quota-free access for exports from least-developed countries (LDCs) in the Doha Round promise to expand the concept even further.

From the perspective of developing countries, these systems have been a mixed success. On the one hand, most developed countries have complied with the obligation to generalize their programmes with respect to membership, by offering benefits to a wide range of developing and least-developed countries, although over time some geographical "graduation" has been applied through the exclusion of entire countries and of products from individual national schemes.

Most schemes are not generalized with respect to products, in that they do not cover all developing-country exports (notable exceptions, until recently, being agriculture and textiles), and in particular tend to favour raw material exports over exports of processed and semi-processed resources, thus exacerbating the problem of commodity dependence that GSP schemes were meant to address. They can also lead to embedded opposition to non-discriminatory trade opening, which is seen as a threat to preference margins. Moreover, it has become increasingly understood and acknowledged that the capacity to take advantage of preferences is strongly influenced by domestic conditions and supply capacity in the economies of the putative beneficiaries.

A third concern throughout this period was the prevalence of tariff escalation – whereby higher processed grades of a commodity face escalating tariffs, discouraging higher value-added production and investment in developing countries, reinforcing primary-product exports and exacerbating poorer countries' terms-of-trade difficulties. This problem partly resulted from the efforts of industrialized countries to protect low-skill, low-technology manufacturing industries and jobs (such as textiles, apparel or footwear), but it also partly reflected the composition and mechanics of successive GATT negotiations which, at least until the launch of the Uruguay Round in 1986, tended to be dominated by industrialized countries and reflect their trade concerns and negotiated bargains (Gordon-Ashworth, 1984). The Tokyo Round (1973-79) and the Uruguay Round (1986-93) made the reduction of tariff escalation a key objective, but achieved limited success. It may well be that the Doha Round, launched in 2001 with its non-linear formula approach, will do better.

In recent decades – especially over the past few years – discussions surrounding natural resources trade in the GATT/WTO have increasingly focused on the concerns of commodity-importing countries which are worried about rising resource prices and signs of increasing restrictions on the export of raw materials. The issue stems in part from growing global demand for scarce resources which, moreover, are often exported by a relatively small number of countries. Resource scarcity and uneven geographical distribution create scope for countries holding reserves to influence the prices and quantities of the raw materials made available on world markets (Korinek and Kim, 2009).

In effect, producing nations may restrict or tax exports for several reasons. These include offsetting tariff escalation in importing countries, guaranteeing local supplies of strategic resources to downstream domestic industries, improving terms-of-trade by limiting market supply and raising world prices, creating comparative advantages in high-tech industries that depend on access to rare metals or minerals and protecting the environment.

Many of these issues were raised during the Uruguay Round. At the insistence of a number of commodity-exporting countries, a specific Negotiating Group on Natural Resource Based Products (NRBPs) was established at the outset of the Round, which not only looked at long-standing issues such as tariffs (including preferences, tariff peaks – relatively high tariffs – and tariff escalation), non-tariff barriers to trade, and subsidies, but also attempted – unsuccessfully – to bring energy issues and export restrictions into the scope of its negotiations (Stewart, 1993). Similar pressure to bring export taxes and restrictions and "dual pricing"² (see Section D) into WTO negotiations has been felt in the current Doha Round and in the accession negotiations of a number of countries.

Box 26: “Commercial presence” mode of supply under the GATS: Rules relevant for investment in services

Many services are characterized by the simultaneity of production and consumption, which means that in some sectors it is important for service suppliers to establish a commercial presence in the markets where they want to sell services.

Commercial presence is estimated to represent close to 60 per cent of international trade in services. The “commercial presence” mode of supply, also referred to as mode 3, covers the supply of a service “by a service supplier of one Member, through commercial presence in the territory of any other Member” (Art. I:2(c)). This covers any type of business or professional establishment, including through (i) the constitution, acquisition or maintenance of a juridical person; or (ii) the creation or maintenance of a branch or a representative office, within the territory of a Member for the purpose of supplying a service (Art. XXVIII(d)). Commercial presence may take place through a new establishment, or through acquisition, in whole or in part, of an existing firm.

The GATS does not make a distinction between pre- and post-establishment phases, but it *de facto* addresses both of them. The difference stems from the nature of the obligations themselves. For instance, while national treatment (MFN) address both pre- and post-establishment restrictions, the market access provision tends to be related more to pre-establishment.

GATS obligations on commercial presence depend to a large extent on the type of specific commitments undertaken by WTO members. Market access and national treatment obligations exist only in sectors where members have undertaken specific commitments, and assuming that mode 3 has not been left “unbound”. Members retain flexibility when scheduling mode 3 commitments. They may subject these commitments to various types of market access limitations: for instance, they may limit the number of suppliers through economic needs tests, exclude certain types of legal entity, require joint-venture, or limit the participation of foreign capital. National treatment limitations may include restrictions on land ownership, different subsidy and tax regimes, residency requirements, etc. Regardless of the existence of specific commitments, the MFN obligation applies to all government measures affecting trade in services.

There are several important differences between GATS mode 3 and bilateral investment treaties (BITs) or investment chapters contained in certain preferential trade agreements. Among other things, the definition of investment tends to be broader in the latter two than under the GATS. Moreover, the GATS does not provide for an investor-state dispute settlement mechanism and does not contain investment protection obligations, such as minimum standards of protection or compensation in cases of expropriation. The large majority of BITs, on the other hand, cover only the post-establishment phase as they tend to focus on protecting foreign investment rather than granting market access opportunities.

- (b) WTO rules and the particular characteristics of the natural resources trade
- (i) *Trade rules and the uneven global distribution of natural resources*

Import tariffs (Article II of the GATT 1994)

Article II of the GATT 1994 prohibits WTO members from applying “ordinary customs duties” on the importation of a product that are higher than the rate specified (or “bound”) in their schedules of commitments. Through successive rounds of trade negotiations, the number of products subject to tariff bindings has increased and the levels at which tariffs are bound have been progressively brought down.³ Members are also prohibited from applying any other duties or charges on the importation of a product, unless specified in the schedule of commitments.⁴ Similar limitations apply to agricultural goods under Article 4 of the Agreement on Agriculture.

Maximum tariff rates (referred to as “tariff bindings”) have been progressively reduced in the eight rounds of GATT negotiations, the last of which was the Uruguay Round. Further reductions are presently being negotiated as part of the WTO Doha Round. Tariff levels on natural resources were examined in Section D, which concluded that tariff protection for natural resource sectors is generally lower

than for overall merchandise trade, with the possible exception of fisheries. Tariff escalation can be seen for some natural resource goods, such as forestry and mining, but not for others, such as fuels.

Import and export restrictions (Article XI of the GATT 1994)

Article XI of the GATT 1994 provides that no prohibitions or restrictions, other than duties, taxes or other charges, shall be applied by any WTO member on the importation of any product or on the exportation or sale for export of any product. This provision covers quotas and other similar measures that establish quantitative limitations on imports or exports (other than duties, taxes or other charges). Because Article XI refers both to “prohibitions” and “restrictions”, a WTO panel has found that “restriction” need not be a blanket prohibition or a precise numerical limit” (Panel Report, *India – Autos*, para. 7.270). Following this interpretation, a recent panel found that a measure that limited the number of ports through which certain goods entered a WTO member (albeit not the quantities that could enter through the authorized ports) was inconsistent with Article XI because the measure had a “limiting effect” on imports (Panel Report, *Colombia – Ports of Entry*, para. 7.240).

Article XI provisions applying to export restrictions are particularly relevant for some of the natural resource sectors covered in this report. As noted in Section D,

information extracted from the WTO's Trade Policy Reviews shows a higher incidence of export taxes on natural resources than on other sectors. The use of the phrase "other than duties, taxes or other charges" in Article XI has been generally understood to mean that this provision does not prohibit WTO members from applying export taxes. Another issue is whether Article XI applies to production limitations, as opposed to export restrictions. Again, based on the language of the provision, it has been generally understood that production restrictions are not covered by Article XI and thus would be permissible.

There is an exception to the prohibition in Article XI that permits WTO members to impose export prohibitions or restrictions temporarily "to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party". This exception, which is found in Article XI:2(a), is discussed below in Section E.1(b)(ii).⁵

Non-discrimination (Articles I and XIII of the GATT)

Article I of the GATT sets out the most-favoured-nation principle, one of the fundamental obligations of the multilateral trading system. This provision prohibits a WTO member from treating the products originating in or destined for another member less favourably than the "like" products originating in or destined for any other country (including non-WTO members).

Article I is broad in scope and covers customs duties and charges of any kind imposed on or in connection with importation or exportation or imposed on the international transfer of payments for imports or exports, the method of levying such duties and charges, and all rules and formalities in connection with importation and exportation, as well as internal taxes and domestic regulations. This provision has important implications for trade in natural resources.

Under Article I, a WTO member that is a consumer of a natural resource must provide similarly favourable treatment (in terms of tariffs, customs formalities, internal taxes, domestic regulations, etc) to imports of the like natural resource originating in other members.⁶ Thus, WTO member A cannot subject imports of coal from WTO member B to a higher tariff than imports of coal from WTO member C. Export taxes and other export regulations are also subject to the obligations in Article I, even if such measures are not prohibited under Article XI. This means that WTO member A cannot subject its exports to WTO member B to a higher export tax than it applies to exports to WTO member C.

Article XIII of the GATT states that no prohibition or restriction shall be applied by any WTO member on the importation of any product of the territory of any other member or on the exportation of any product destined for the territory of any other member, unless the importation of the like product of all third countries or the exportation of the like product to all third countries

is similarly prohibited or restricted. Article XIII applies to tariff rate quotas on imports. Moreover, even where a WTO member is allowed to apply an export prohibition or restriction, its application must be non-discriminatory. The non-discrimination obligation in Article XIII would be relevant, for example, where a member imposes an export prohibition or restriction temporarily to prevent or relieve critical shortages of foodstuffs or other essential products under Article XI:2(a) of the GATT (Mavroidis, 2005).

State-trading enterprises (Article XVII of the GATT)

Article XVII:1 of the GATT recognizes that WTO members may establish or maintain state enterprises or grant exclusive or special privileges to private enterprises. Several state-trading enterprises relating to natural resources have been notified by members under Article XVII. Examples of such notifications include those by Brazil relating to ITAIPU Binacional (imported electrical energy) and Industria Nucleares do Brasil S.A.-INB (imports of spare parts and fuel for nuclear installations), and by the Bolivarian Republic of Venezuela on Petroleos de Venezuela S.A. (PDVSA) and its subsidiaries (hydrocarbons).⁷ An initial point worth noting is that the prohibition in Article XI of the GATT and the non-discrimination obligation in Article XIII of the GATT apply to import and export restrictions made effective through state-trading operations (Ad note to Articles XI, XII, XIII, XIV and XVIII of the GATT).

Sub-paragraph (a) of Article XVII:1 states that state-trading enterprises shall, in their purchases or sales involving either imports or exports, act in a manner consistent with the general principles of non-discriminatory treatment prescribed in the GATT for governmental measures affecting imports or exports by private traders. Sub-paragraph (a) "seeks to ensure that a Member cannot, through the creation or maintenance of a state enterprise or the grant of exclusive or special privileges to any enterprise, engage in or facilitate conduct that would be condemned as discriminatory under the GATT 1994 if such conduct were undertaken by the Member itself" (Appellate Body Report, Canada – Wheat Exports and Grain Imports, para. 85).

Sub-paragraph (b) provides that the provisions of sub-paragraph (a) shall be understood to require that such enterprises shall make any such purchases or sales solely in accordance with commercial considerations, and lists a number of factors to be taken into account. The Ad Note to Article XVII:1(b), however, clarifies that a state enterprise may charge different prices for its sales of a product in different markets, provided that such different prices are charged for commercial reasons, to meet conditions of supply and demand in export markets. Moreover, the Appellate Body has stated that, while Article XVII:1 aims to prevent certain types of discriminatory behaviour, it does not impose "comprehensive competition-law-type obligations" on state-trading enterprises (Appellate Body Report, Canada – Wheat Exports and Grain Imports, para. 145).

Freedom of transit (Article V of the GATT)

Article V sets out rules that apply to goods, vessels and other means of transport that are “traffic in transit” – that is, when they cross the territory of another WTO member and the passage is only a portion of a complete journey beginning and terminating beyond the frontier of the member through whose territory the traffic passes. Article V ensures that freedom of transit is extended through the territory of each WTO member, via the routes most convenient for international transit, for traffic in transit to or from the territory of other members. Traffic in transit must also be accorded MFN treatment with respect to all charges, regulations and formalities in connection with transit.

Goods in transit through a WTO member’s territory do not enter the market of that member (they are not “imported”), so there is no national treatment obligation in the sense of Article III of the GATT. However, in addition to requiring that freedom of transit is extended to all goods in transit from other members via the most convenient routes for international transit, Article V:2 prohibits any discrimination with respect to the nationality, place of origin, departure, entry, exit or destination, or any circumstances relating to the ownership of goods, of vessels or of other means of transport. In that context, while Article V does not require that goods in transit are treated like goods destined for, or originating in, the WTO member’s domestic market, it might be argued that Article V:2 entails a limited form of national treatment, i.e. a requirement not to discriminate between foreign-owned and nationally-owned goods in transit (Cossy, 2010). In addition, one could contend that Article V:2 seems, in certain respects, to favour goods in transit over national goods as it requires members to guarantee international transit via the most convenient routes.

There has been some discussion as to whether Article V applies only to “moving” modes of transport, such as vessels and trucks, or also applies when transit occurs through the use of fixed infrastructure, such as electricity grids or gas and oil pipelines. Cossy (2010) argues that there is nothing in the text of Article V that would exclude transportation via fixed infrastructure. She notes that Article V refers generally to “vessels and other means of transport” and includes an explicit exception for aircraft in transit, which would suggest that the drafters did not intend to exclude other forms of transportation.

The obligations of Article V apply only to WTO members and are thus of limited relevance where a natural resource is transported via a third country that is not a member. Today, such a scenario is commonplace in the context of trade in energy products, where oil and gas are transited from Central Asia or Eastern Europe to Western Europe through a large number of countries that are still negotiating their accession to the WTO, such as Azerbaijan, Belarus, Kazakhstan, Russia, Tajikistan and Uzbekistan. Indeed, the issue of freedom of transit is central to the accession processes of many non-WTO members (see sub-section 3).

Another important limitation is that Article V imposes obligations on WTO members – it is not clear whether and how such disciplines would apply to situations where infrastructure is owned and operated by a state-trading enterprise or a private corporation (Cossy, 2010). A proposal has been made in the trade facilitation negotiations for members to agree that enterprises to which they have granted special privileges comply with GATT provisions on transit.

(ii) Trade rules and the exhaustibility of natural resources

Subsidies and countervailing measures

In some circumstances, subsidies can exacerbate the over-exploitation of scarce natural resources. The WTO includes important disciplines on the use of subsidies by WTO members. Subsidies to non-agricultural goods are regulated under the SCM Agreement. Specific disciplines on agricultural subsidies are set out in the Agreement on Agriculture. The SCM Agreement defines a “subsidy” as a financial contribution by a government or any public body within the territory of a member that confers a benefit. A financial contribution is deemed to exist where (i) a government practice involves a direct transfer of funds; (ii) government revenue that is otherwise due is foregone; (iii) a government provides goods or services other than general infrastructure; or (iv) a government entrusts or directs a private body to carry out one or more of the types of functions listed in (i) to (iii). A benefit is conferred where a financial contribution is received on terms more favourable than those available to the recipient on the market (Appellate Body Report, Canada – Aircraft).

Only subsidies that are “specific” to an enterprise, industry or a group of enterprises or industries are regulated by the SCM Agreement. Export subsidies and subsidies contingent on the use of domestic products are prohibited. The remaining subsidies are considered “actionable”, which means that they can be challenged if they have adverse effects. A WTO member that is affected by subsidies granted by another member can challenge those subsidies in the WTO dispute settlement mechanism. Alternatively, the affected member can apply countervailing duties to the subsidized imports if it shows that they cause or threaten to cause injury to its domestic industry.

Some of the products discussed in this report, such as certain wood products and raw materials, are subject to the Agreement on Agriculture. The disciplines on agricultural subsidies differ from the rules applicable to non-agricultural subsidies. Agricultural export subsidies are subject to limitations agreed upon by each member of the WTO in its schedule of commitments. Members who have included export subsidy commitments in their schedules may not grant export subsidies that exceed those commitments. Those who have not included export subsidy commitments in their schedules are prohibited from granting such subsidies. WTO members also undertook commitments to reduce the domestic

support provided to their agricultural sectors. It has been estimated that agriculture is responsible for 85 per cent of global water consumption (Hoekstra, 2010). Thus, to the extent the disciplines of the Agreement on Agriculture have an impact on global agricultural production, they also have implications for the preservation of water supplies.

Article XVI of the GATT also regulates subsidies and includes less stringent disciplines for certain export subsidies to primary products. The Ad Note to Article XVI defines "primary products" as "any product of farm, forest or fishery, or any mineral, in its natural form or which has undergone such processing as is customarily required to prepare it for marketing in substantial volume in international trade". There may be questions about the continued relevance of this provision in the light of the adoption of the SCM Agreement and the Agreement on Agriculture. Some of the primary products covered by Article XVI, such as minerals, fish and fish products, are not covered by the Agreement on Agriculture and, therefore, would be subject to the prohibition on export subsidies in the SCM Agreement. Under the general interpretative note to Annex 1A, the provisions of the SCM Agreement would prevail over a provision of the GATT and its schedules in the event of a conflict. By contrast, the GATT, its schedules and the SCM Agreement are subject to the provisions of the Agreement on Agriculture.

WTO exceptions that permit otherwise inconsistent conduct (Article XX of the GATT)

Article XX of the GATT, entitled "General Exceptions", permits WTO members to take certain actions that are inconsistent with their GATT obligations. The WTO Appellate Body has found that in order for such conduct to be protected by Article XX, a member must show first that the measure at issue is of the type that is covered by one of the sub-paragraphs of Article XX. Secondly, the measure must be applied in a manner that is consistent with the chapeau of Article XX, which requires that measures not be applied in a manner that would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade (Appellate Body Report, *US – Shrimp*, paras. 118-121). Article XX has ten subparagraphs, of which (g) and (j) relate directly to the issue of exhaustibility. Sub-paragraph (b) may also be relevant. It concerns measures taken to protect human, animal or plant life or health and is discussed in Section E.2(b)(iii) below.⁸

Article XX(g) of the GATT permits the adoption of measures that are related to the conservation of exhaustible natural resources, provided that such measures are made effective in conjunction with restrictions on domestic production or consumption. This provision was first invoked in the WTO dispute settlement in *US – Gasoline*, where it was determined that "a policy to reduce the depletion of clean air was a policy to conserve an exhaustible natural resource

within the meaning of Article XX(g)" (Appellate Body Report, *US – Gasoline*, p. 14). In *US – Shrimp*, the issue arose whether the term "exhaustible natural resource" refers exclusively to mineral or non-living resources or could also encompass living and renewable resources (particularly sea turtles in that case). On the question of whether a renewable natural resource could be considered exhaustible, the Appellate Body stated:

"One lesson that modern biological sciences teaches us is that living species, though in principle, capable of reproduction and, in that sense, 'renewable', are in certain circumstances indeed susceptible of depletion, exhaustion and extinction, frequently because of human activities. Living resources are just as 'finite' as petroleum, iron ore and other non-living resources" (para. 128).

In addition to showing that the natural resource in question is "exhaustible", a WTO member relying on Article XX(g) must also ensure its measure *relates* to the conservation of this resource. In one dispute, this requirement was satisfied because the measure was "primarily aimed" at the conservation of a natural resource (Appellate Body Report, *US – Gasoline*).⁹ In another dispute, it was noted that "the means and ends relationship" between the measure and the legitimate policy of conserving an exhaustible natural resource was "observably a close and real one" (Appellate Body Report, *US – Shrimp*, paras. 142-144). Finally, the requirement that the measure be "made effective in conjunction with restrictions on domestic production or consumption" has been described as "a requirement of even-handedness in the imposition of restrictions, in the name of conservation" (Appellate Body Report, *US – Gasoline* pp. 20-21).

Article XX(j) allows WTO members to take measures that are essential to the acquisition or distribution of products in general or local short supply. However, any such measures must be consistent with the principle that all members are entitled to an equitable share of the international supply of such products. This provision, in its original form, was adopted for a limited period of time to "take care of temporary situations arising out of the war",¹⁰ before being accepted as a permanent provision in 1970.¹¹

The phrase "general or local short supply" was intended to apply to "cases where a product, although in international short supply, was not necessarily in short supply in all markets throughout the world. It was not used in the sense that every country importing a commodity was in short supply."¹² This exception would provide WTO members with some flexibility to take trade-restrictive action when a particular resource becomes temporarily scarce. This flexibility is constrained by the requirement imposed by subparagraph (j) to respect the principle of equitable shares for members and the requirements of the chapeau of Article XX.

Box 27: General exceptions in the GATS and the protection of the environment

The GATS contains a general exceptions provision which is modelled on GATT Article XX. The preamble of GATS Article XIV is nearly identical, but the list of possible exceptions is shorter. While the GATS also contains an exception allowing WTO members to take measures "necessary for the protection of human, animal or plant life or health" (Art. XIV(b)), it does not provide for an exception addressing "the conservation of exhaustible natural resources" (GATT Art. XX(g)).

The scope of GATS general exceptions as they relate to the environment was discussed during the Uruguay Round. Some delegations proposed an exception referring to the "conservation of natural resources" or to "the environment". These proposals were not retained, but the compromise solution was that WTO members would revisit the issue after the entry into force of the GATS.

In the 1995 Ministerial Decision on Trade in Services and the Environment,¹³ the Council for Trade in Services (CTS) acknowledges that measures necessary to protect the environment may conflict with the provisions of the GATS and notes that "since measures necessary to protect the environment typically have as their objective the protection of human animal or plant life or health, it is not clear that there is a need to provide for more than is contained in paragraph (b) of Article XIV". The CTS further decided:

"[i]n order to determine whether any modification of Article XIV of the Agreement is required to take account of such measures, to request the Committee on Trade and Environment to examine and report, with recommendations if any, on the relationship between services trade and the environment including the issue of sustainable development. The Committee shall also examine the relevance of inter-governmental agreements on the environment and their relationship to the Agreement."

In December 1996, the Committee on Trade and Environment (CTE) reported that preliminary discussions on this issue "had not led to the identification of any measures that Members feel may need to be applied for environmental purposes to services trade which would not be covered adequately by GATS provisions, in particular Article XIV(b)".¹⁴ The issue is still under consideration in the CTE.¹⁵

The 1950 Working Party on "The Use of Quantitative Restrictions for Protective and Other Commercial Purposes" noted that the equitable share principle in subparagraph (j) is different from the principle of non-discrimination, and emphasized that a determination of what is equitable "will depend upon the facts in ... any given circumstances". It also noted that circumstances in which a WTO member "diverts an excessive share of its own supply to individual countries" will be contrary to the principle of equitable distribution. To date, there have been no WTO dispute settlement proceedings addressing this provision.¹⁶

Exceptions to the prohibition of non-tariff restrictions (Article XI of the GATT)

As discussed in Section E.1(b)(i) above, Article XI of the GATT prohibits non-tariff import restrictions and bans export restrictions other than duties, taxes or other charges. Article XI(2)(a) provides an exception to this prohibition, and permits WTO members to impose export prohibitions or restrictions temporarily "to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party". Although this provision has not been examined in either a GATT or WTO dispute, GATT preparatory work indicates that the words "prevent or" were added to "enable a [m]ember to take remedial action before a critical shortage has actually arisen" (EPCT/141).

The Report of the Review Working Party on "Quantitative Restrictions" states that "to the extent that the rise in prices was associated with acute shortages of the products in question ... (a temporary export restriction

whether affecting foodstuffs or other products, was clearly covered by ... sub-paragraph (2(a))" (GATT Analytical Index, p. 326). De Han (1997) argues that export restrictions on water could be covered by this exception, as a product essential to the exporting state or as a foodstuff.

Article 12 of the Agreement on Agriculture sets out two obligations that are triggered when a WTO member invokes Article XI:2(a) of the GATT 1994 to institute a new export prohibition or restriction on foodstuffs. First, Article 12 requires the member instituting the measure to give due consideration to the effects of such a prohibition or restriction on importing members' food security. Second, the member must give notice in writing, as far in advance as practicable, to the Committee on Agriculture and shall consult, upon request, with any other member having a substantial interest as an importer. The obligations in Article 12 apply only to developed country members and to developing country members that are net food exporters of the specific foodstuff concerned.

(iii) Trade rules and the existence of externalities

Principle of non-discrimination: MFN and national treatment (Articles I and III of the GATT)

The principle of non-discrimination may constrain the ways in which a WTO member can impose measures designed to manage externalities. As mentioned earlier,

the principle of non-discrimination is articulated in the MFN (Article I of the GATT) and national treatment obligations (Article III of the GATT). Prohibitions and restrictions on imports and exports are also subject to a non-discrimination obligation under Article XIII of the GATT.

A key question is whether it is consistent with the principle of non-discrimination for WTO members to treat products differently based on non-product related process and production methods (PPMs). An example of this would be to treat products differently depending on the source of energy used in the manufacturing process. A specific example would be the situation where the value-added tax (VAT) applied to a plastic toy manufactured using "clean" electricity is lower than the VAT applied to the same toy when it is manufactured using electricity from other sources.

Some argue that it is consistent to treat goods with PPMs that minimize negative externalities differently from goods with PPMs that do not minimize these externalities (Potts, 2008). Others argue that policies such as these are inconsistent with the principle of non-discrimination because "like" products are not afforded equal treatment. The basis of this argument is that different PPMs are not an appropriate basis to treat differently products that are otherwise physically identical. Many equate such discrimination with "richer countries attempting to impose their environmental and social standards on the rest of the world".¹⁷ From a legal perspective, the focus of the debate concerns the meaning of the term "like products" as it appears in various provisions of the GATT.

The analysis of likeness between two products must be undertaken on a case-by-case basis. The four criteria that have been considered in the process are:

- the properties, nature and quality of the products
- the end uses of the products
- consumers' tastes and habits
- the tariff classification of the products.¹⁸

Those seeking to justify differential treatment based on non-product related process and production methods are likely to emphasize that in *EC – Asbestos* the Appellate Body considered the health risks associated with chrysotile asbestos fibres in its analysis of the products' properties (Appellate Body Report, *EC – Asbestos*, paras. 135-136). By analogy, it has been suggested that distinctions relating to PPMs could also be taken into account in the analysis of likeness – for example, under consumers' tastes and habits, if consumers perceive those products that minimize negative externalities differently from those products that do not.

Some commentators have interpreted the Appellate Body's decisions in *US - Shrimp* and *EC – Asbestos* as supporting the proposition that differentiation based on PPMs is permitted by the GATT (Charnovitz, 2002; Halle, 2007). Conversely, there are others that consider

that differences in PPMs do not necessarily make products unlike. Those holding this view emphasize that the properties, end-uses and the tariff classification are the same for both products, even if their PPMs differ. They would refer to the GATT Panel in *Tuna/Dolphin II*, which found that "... Article III calls for a comparison between the treatment accorded to domestic and imported like products, not for a comparison of the policies or practices of the country of origin with those of the country of importation" (GATT Panel Report, *Tuna/Dolphin II*). It is worth noting, however, that this panel report dates back to 1994 and was not adopted by the contracting parties, which means that it was never legally binding.

Labelling (Technical Barriers to Trade Agreement)

A WTO member may seek to encourage better management of certain negative externalities by requiring products to bear "eco-labels" (see Section D.4). An eco-label is a policy instrument designed to provide consumers with information about the impact of a product (including its PPM) on the environment and on sustainable development (Staffin, 1996; Chalifour, 2000). The rationale underpinning eco-labelling is that consumers will usually select the product for which negative externalities were best managed, and in doing so compel environmentally unfriendly producers to adjust their products and PPMs to better address these externalities (Staffin, 1996; Chalifour, 2000).

The Agreement on Technical Barriers to Trade (TBT Agreement) governs the use of technical regulations and voluntary product standards. The definition of technical regulations includes documents that refer to "product characteristics or their related processes and production methods". Similar language is used in the definition of a standard. The second sentence of both definitions, however, refers to labelling requirements "as they apply to a product, process or production method". The absence of the qualifying language "relating to" in the second sentence "has been interpreted by some as providing some scope for the labelling of a non-product related process or production method (i.e. that does not leave a trace in the final product, so-called 'unincorporated PPMs') to be covered by the TBT Agreement" (WTO and UNEP, 2009).

If an eco-label is regulated by the TBT Agreement, a WTO member must ensure that it is applied in a non-discriminatory manner to imported "like" products (Article 2.1, TBT Agreement). Moreover, members must ensure that the eco-label is not prepared, adopted or applied with a view to, or with the effect of, creating unnecessary obstacles to international trade (Article 2.2, TBT Agreement). Article 2.4 of the TBT Agreement expresses a preference for use of international standards as a basis for technical regulations where those standards exist or their completion is imminent. Under Article 2.5, whenever a technical regulation is in accordance with relevant international standards, it shall be rebuttably presumed not to create an

unnecessary obstacle to international trade. However, members are not required to use international standards where those standards would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued.

Sanitary and phytosanitary measures (SPS Agreement)

The Agreement on Sanitary and Phytosanitary Measures (SPS Agreement) recognizes that WTO members have the right to adopt sanitary and phytosanitary measures to protect human, animal or plant life or health (Article 2(1), SPS Agreement). However, the SPS Agreement imposes a number of conditions on this right.

First, SPS measures must be applied only to the extent necessary to protect human, animal or plant life or health, and must be based on scientific principles and not maintained without sufficient scientific evidence (Article 2(2), SPS Agreement). Second, SPS measures must not arbitrarily or unjustifiably discriminate among WTO members where identical or similar conditions prevail (Article 2(3), SPS Agreement). Finally, members may choose to base their SPS measures on international standards (Article 3(1), SPS Agreement). Measures which conform to international standards shall be deemed to be necessary to protect human, animal or plant life or health and presumed to be consistent with the relevant provisions of the SPS Agreement and the GATT (Article 3(2), SPS Agreement). Members may introduce measures which result in a higher level of SPS protection than would otherwise be achieved by measures based on international standards, provided that there is scientific justification or as a consequence of the level of SPS protection a member determines to be appropriate (Article 3(3), SPS Agreement).

Article 2(4) of the SPS Agreement provides that if a SPS measure conforms with the requirements of the SPS Agreement, it is deemed to comply with the exception contained in Article XX(b). In the context of trade in natural resources, the SPS Agreement provides WTO members with a mechanism to limit, or even ban, the importation of certain harmful natural resource products without breaching their WTO obligations. This could, for example, include prohibiting the importation of certain forestry products that are likely to contain invasive species, such as Chestnut Blight, Dutch Elm Disease or Asian Longhorned Beetles (Chalifour, 2000; Hughes, 2010).

Charges equivalent to an internal tax on inputs

Article II of the GATT allows WTO members to impose a charge equivalent to an internal tax on the importation of any product. Issues relating to the interpretation of this and other related GATT provisions have been debated in relation to carbon taxes (WTO and UNEP, 2009).

WTO exceptions that permit otherwise inconsistent conduct (Article XX of the GATT)

The WTO recognizes that a member, in certain circumstances, may need to act inconsistently with its obligations in order to manage negative externalities, such as a negative impact on the environment. In the context of trade in natural resources, the most relevant "exceptions" are contained in Article XX of the GATT.¹⁹ For a member seeking to manage a negative externality by implementing a WTO-inconsistent measure, the most relevant provisions of Article XX are contained in sub-paragaphs (b), (d) and (g). Sub-paragaph (g) is discussed above in Section E.1(b)(ii); sub-paragaphs (b) and (d) are discussed below.

Article XX(b) permits the adoption of measures that are necessary to protect human, animal or plant life or health. When invoking Article XX(b), a member must first show that the policy underpinning the measure in question falls within the range of policies designed to protect human, animal or plant life or health. Next, it must prove that the inconsistent measure was necessary to fulfil the policy objective.

On the first question, it is often the case that parties to a dispute will agree that the policy in question is designed to protect human or animal life, and thus falls under Article XX(b).²⁰ Where parties disagree, a panel will undertake an assessment of the purported risk, and determine whether the policy in question is designed to protect human or animal life from this risk. For example, in *EC – Asbestos*, the WTO Appellate Body affirmed a finding by the panel that "the evidence before it tends to show that handling chrysotile-cement products constitutes a risk to health (...)" and that therefore "the EC ha[s] shown that the policy of prohibiting chrysotile asbestos implemented by the Decree falls within the range of policies designed to protect human life or health" (paras. 8.193-8.194).

On the second question, in *Brazil – Retreaded Tyres*, the Appellate Body stated that a determination of whether a measure is "necessary" for the purposes of Article XX(b) involves an assessment of "all the relevant factors, particularly the extent of the contribution to the achievement of a measure's objective and its trade restrictiveness, in the light of the importance of the interests or values at stake" (para. 156). The Appellate Body further stated that a measure will be "necessary" if it is "apt to bring about a material contribution to the achievement of its objective" (Appellate Body Report, *Brazil – Retreaded Tyres*, para 151). Marceau and Wyatt (2009) have argued that the test applied by the Appellate Body in *Brazil – Retreaded Tyres* "seems less stringent in terms of what relationship it requires between the measures adopted and the policy objective pursued – thus producing more policy space for, amongst other things, environmental protection measures". They further suggest that this means that sub-paragaph (b) allows for similar flexibility as sub-paragaph (g), which concerns measures relating to the conservation of exhaustible natural resources.²¹

Article XX(d) permits the adoption of measures that are necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of the GATT. In order for a measure otherwise inconsistent with the GATT 1994 to be justified under Article XX(d), it must first be shown that the measure is designed to secure compliance with laws or regulations that are not themselves inconsistent with some provision of the GATT 1994 (Appellate Body Report, *Mexico – Soft Drinks*, para. 67). The term "laws or regulations" has been understood to cover rules that form part of the domestic legal system of a WTO member, including rules deriving from international agreements that have been incorporated into the domestic legal system of a member or have direct effect according to that member's legal system. In reaching this conclusion, a concern identified was that a contrary interpretation would mean that WTO panels and the Appellate Body would become adjudicators of non-WTO disputes (Appellate Body Report, *Mexico – Soft Drinks*, paras. 78-79).

The requirement that the measures "secure compliance" was discussed by the panel in *US - Gasoline*, which had to determine whether the methods used by the United States to assess the composition and emission effects of imported gasoline were measures necessary to "secure compliance with a law or regulation" for the purposes of Article XX(d). The panel found these methods did not secure compliance with a law or regulation because "(they) were not an enforcement mechanism. They were simply rules for determining the individual baselines" (para. 6.33). In relation to the second element of Article XX(d) – that the measure be "necessary" to secure compliance – the panel in *Thailand – Cigarettes* held that the word "necessary" has the same meaning under Articles XX(d) as it does under Article XX(b) (para 74).

It has been suggested that sub-paragraph (d) could be used to justify import restrictions on illegally logged timber as it could be argued that the restrictions seek to secure compliance with forestry laws. One difficulty is that Article XX(d) is usually understood as applying to measures that seek enforcement of the domestic law of the WTO member applying the import restriction. In other words, the enforcement measure and the laws and regulations being enforced are taken by the same member. By contrast, in the example concerning illegally logged timber mentioned earlier, the import restriction would be applied by the importing member in order to secure compliance with the exporting member's forestry law (Brack, 2009).

Subsidies to manage externalities (SCM Agreement)

Article 8 of the SCM Agreement deems certain governmental assistance as non-actionable (i.e. not subject to challenge in the WTO or to countervailing measures). This includes assistance granted for research and development, and assistance to promote the adaptation of existing facilities to new environmental requirements. This provision, however, expired in 1999 and has not been renewed.

The SCM Agreement may also have a bearing on a WTO member's ability to provide access to natural resources to domestic users in exchange for undertakings by those users to harvest or extract the natural resources in a manner that minimizes negative externalities. For example, in a WTO challenge to a countervailing measure, the complaining party argued that standing timber provided to domestic users should not be characterized as subsidy because the price reflected "various forest management obligations and other in-kind costs relating to road-building or silviculture" (Panel Report, *US – Softwood Lumber IV*, para. 7.15).

There has been some discussion regarding whether Article XX of the GATT could be invoked to justify a measure that is contrary to the SCM Agreement or to other agreements regulating trade in goods. Some consider that the text of Article XX – particularly the phrase "nothing in this Agreement" – makes it clear that this provision may only be used to justify measures that are inconsistent with the GATT. There are others who see scope for Article XX to apply to other agreements regulating trade in goods, such as the SCM Agreement; they find support for this in a recent decision of the Appellate Body to the effect that Article XX could be invoked in relation to a specific provision in China's Protocol of Accession (Pierola, 2010).

Import licensing

Import licences are sometimes used to control the importation of products for conservation purposes. For example, endangered specimens of wild animals and plants covered by the CITES Agreement (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) may only be imported in exceptional circumstances and importation requires a permit. Some countries have also adopted import licensing schemes to control the importation of certain forestry products (Brack, 2009). The WTO Agreement on Import Licensing may be relevant in these cases. The Agreement provides that import licensing should be simple, transparent and predictable. It requires publication of information that allows traders to know how and why the licences are granted and includes requirements regarding notifications to the WTO. The Agreement also provides guidance on how governments should assess applications for licences.

Government procurement

Some WTO members impose conditions on the purchases of their central and sub-central government entities as a means of minimizing certain international externalities, such as the negative environmental consequences of certain practices. Brack (2009), for example, notes that several countries require that timber products purchased by government entities must come from timber that is legally and sustainably harvested. The Agreement on Government Procurement (GPA) is plurilateral, which means that it only applies with respect to those countries and customs territories

that are parties to it. Furthermore, the obligations in the GPA apply only to government entities and sectors which the corresponding party has included in its schedule of commitments. Brack (2009) observes that several important consumers of timber are parties to the GPA, but many of the largest producers are not.

For those entities and sectors that are covered, the GPA establishes obligations concerning openness, non-discrimination, and transparency. For instance, in respect of the procurement covered by the Agreement, parties are required to accord the products, services and suppliers of any other party to the Agreement treatment “no less favourable” than that given to their domestic products, services and suppliers (Article III:1(a)). Furthermore, parties may not discriminate among goods, services and suppliers of other parties (Article III:1(b)). In addition, each party is required to ensure that its entities do not treat domestic suppliers differently on the basis of a greater or lesser degree of foreign affiliation or ownership and to ensure that its entities do not discriminate against domestic suppliers because a good or service is produced in the territory of another party (Article III:2).

The GPA also prohibits the use of offsets, such as measures to encourage local development or improve the balance-of-payments accounts by means of domestic content, licensing of technology, investment requirements, counter-trade or similar requirements. Article VI of the GPA allows technical specifications laying down the characteristics of the products or services to be procured, including the processes and methods for their production, provided that such specifications do not create unnecessary obstacles to international trade. Article XXIII sets out various exceptions, including one for measures necessary to protect human, animal or plant life or health.

The revised GPA text (GPA/W/297), which is yet to come into force, has specific provisions regarding environmental concerns. For instance, Article X:6 will permit parties, including their procuring entities, to prepare, adopt or apply technical specifications to promote the conservation of natural resources or protect the environment. Article X:9 provides that environmental characteristics may be taken into consideration in spelling out evaluation criteria in tender documentation or notices.

Brack (2009) explains that some domestic government procurement policies allow the use of certain private certification schemes to demonstrate that timber products meet procurement criteria. He argues that certification under the main international schemes (the Forest Stewardship Council and the Programme for the Endorsement of Forest Certification Schemes) has proved to be the easiest way of meeting procurement criteria, and the latter have boosted the market for certified timber. In his view, the use of these certification schemes is consistent with the GPA where other equivalent forms of proof are also allowed.

(iv) *Trade rules and dominance in markets for natural resources*

Dual pricing

Dual pricing arrangements establish different prices in domestic and export markets. This may be achieved, for example, through the imposition of export taxes, quantitative export restrictions, or through state monopolies. A maximum domestic price may also be established administratively at a lower level than the export price. Dual pricing may be used as a means of diversifying the domestic production structure or the export base. Such policies can raise issues under the WTO. Where dual prices are established through export restrictions, for example, those restrictions may be found inconsistent with obligations in Article XI of the GATT.

The SCM Agreement may also be relevant. As noted earlier, the SCM Agreement defines a subsidy as a financial contribution provided by a government that confers a benefit. A WTO member that adopts a policy of dual pricing may be accused of subsidizing its domestic producers by providing discounted input materials. It has been argued by Ripinsky (2004) that a dual-pricing programme could be considered equivalent to the provision of goods or services by a government under Article 1.1(a)(1)(iii) of the SCM Agreement.

In 2000, Canada challenged before a WTO panel the US approach of treating export restraints as a “financial contribution” in countervailing duty investigations against allegedly subsidized imports. Canada argued that the US countervailing duty regime wrongly treated export restraints as financial contributions as government-entrusted or government-directed provision of goods by a private body, along the lines specified in Article 1.1(a)(1)(iv). The United States argued that export restraints could indeed (at least in some factual circumstances) constitute government-entrusted or government-directed provision of goods by a private body.

The panel concluded that the treatment of export restraints as financial contributions is inconsistent with Article 1.1(a) of the SCM Agreement. It rejected the US argument that, to the extent an export restraint resulted in an increased domestic supply of the restrained good, this was as if a government had expressly entrusted or directed a private body to provide the good domestically. However, the panel emphasized that its findings concerned an export restraint as defined by Canada in the context of that particular dispute – namely, a border measure that expressly limits the quantity of exports or places explicit conditions on the circumstances under which exports are permitted, or that takes the form of a fee or tax on exports of the product calculated to limit the quantity of exports (Panel Report, *US – Export Restraints*, paras. 8.19, 8.75 and 8.76).

Another issue is whether the provision of goods at suppressed prices confers a benefit. Article 14(d) of the SCM Agreement provides that to confer a benefit a good has to be provided at less than adequate remuneration.

Under this provision, the adequacy of remuneration is determined with reference to prevailing market conditions in the country of provision. In countries where there is dual pricing, it may be the case that the government is the predominant provider of the good. In the *US – Softwood Lumber IV* case, where Canadian provincial governments were the predominant suppliers of standing timber, the Appellate Body found that "it is likely that (the government) can affect through its own pricing strategy the prices of private providers... inducing (those providers) to align their prices to the point where there may be little difference, if any, between the government price and the private prices" (Appellate Body Report, *US – Softwood Lumber IV*, paras. 101, 103). In these circumstances, the Appellate Body held that it may be necessary to consider private prices in another market to assess accurately the level of benefit conferred.²²

Even if the provision of discounted goods under a programme of dual pricing amounts to a subsidy, some commentators contend that it would not be an actionable subsidy because it would not satisfy the specificity requirement contained in Article 2 of the SCM Agreement (Quick, 2009; Benitah, 2010). It is argued that a system of dual pricing is unlikely to provide *de jure* specific subsidies because, in most cases, the "low-priced ... product is generally available within the economy of the subsidizing government (i.e. available without restriction to all users)" (Marceau, 2010a, 2010b).

Article 2.1(c) of the SCM Agreement lists four factors that may be considered when assessing whether a subsidy that is not specific in a *de jure* sense may be specific in its operation (i.e. in a *de facto* sense). These factors are: i) the use of a subsidy programme by a limited number of certain enterprises; ii) the predominant use of such a programme by certain enterprises; iii) the granting of disproportionately large amounts of subsidy to certain enterprises; and iv) the manner in which discretion has been exercised by the granting authority in the decision to grant a subsidy. The extent to which a given dual-pricing programme involves subsidies that respond to any of these factors is a factual matter relevant to the programme in question.

Canuto and Finenberg (2003) note that a provision specifically dealing with dual pricing of government-supplied inputs was included in an early draft of the SCM Agreement during the Uruguay Round negotiations. The provision, included in a November 1990 draft of Article 14, read as follows:

"When the government is the sole provider or purchaser of the good or service in question, the provision or purchase of such good or service shall not be considered as conferring a benefit, unless the government discriminates among users or providers of the good or service. Discrimination shall not include differences in treatment between users or providers of such goods or services due to normal commercial considerations."

The provision was deleted in a December 1991 negotiating draft.

Essential quantities exception (Article XX(i) of the GATT)

Article XX(i) permits otherwise WTO-inconsistent restrictions on exports of domestic materials where such restrictions are necessary to ensure essential quantities of such materials to a domestic processing industry during periods when their domestic price is held below the world price as part of a governmental stabilization plan. Such restrictions, however, "shall not operate to increase the exports of or the protection afforded to such domestic industry, and shall not depart from the provisions of the (GATT) relating to non-discrimination". The exception was proposed by New Zealand at the Geneva session of the Preparatory Committee in 1947 and was designed:

"... to provide for the case of countries like New Zealand which maintain as a matter of permanent policy price stabilization schemes covering, generally, the whole range of their economy. A country which, like New Zealand, stabilizes its general price levels is faced with the problem that the world price for certain commodities, particularly raw materials which it exports, will be substantially higher than the stabilized price for the like commodity"

(*GATT Analytical Index*, p. 591).

As an example of why this provision was necessary, New Zealand mentioned that leather was sold to its domestic producers at a price much below the world price. It then explained that, in these circumstances, it was necessary to ensure that local requirements of leather were satisfied by applying an export restriction; otherwise there would be no leather for the local market or the local price of leather would rise to the world level (*GATT Analytical Index*, p. 591).

Nevertheless, the 1950 Report of the Working Party on "The Use of Quantitative Restrictions for Protective and other Commercial Purposes" noted that Article XX(i) "does not permit the imposition of restrictions upon the export of a raw material in order to protect or promote a domestic industry, whether by affording a price advantage to that industry for the purchase of its materials, or by reducing the supply of such materials available to foreign competitors, or by other means" (*GATT Analytical Index*, p. 592).

Part IV of the GATT: trade and development

In 1965, Articles XXXVI, XXXVII and XXXVIII were added to the GATT 1947 to form Part IV, entitled *Trade and Development*.²³ A number of provisions contained in these Articles address the issue of dominance. Article XXXVI sets out the principle and objectives of Part IV, and recognizes the need for a "rapid and sustained expansion of the export earnings of the less-developed

(members)". Sub-section 5 of Article XXXVI relates to the export earning capacity of the less-developed members and directly addresses dominance:

"The rapid expansion of the economies of the less-developed (members) will be facilitated by a diversification* of the structure of their economies and the avoidance of an excessive dependence on the export of primary products. There is, therefore, need for increased access in the largest possible measure to markets under favourable conditions for processed and manufactured products currently or potentially of particular export interest to less-developed (members)."

"Diversification" is defined in the Ad Note to Article XXVI as follows:

"A diversification programme would generally include the intensification of activities for the processing of primary products and the development of manufacturing industries, taking into account the situation of the particular (member) and the world outlook for production and consumption of different commodities."

The scope and operation of Part IV of the GATT was considered in the GATT Panel Report in *EC – Refunds on Exports of Sugar*. In that case, the complainant, Brazil, argued that the European Communities' system for granting refunds on exports of sugar was inconsistent with commitments under Article XXXVI of the GATT. The European Communities argued that Brazil's complaint could not be grounded on Article XXXVI of the GATT alone because "the provisions of (this) Article ... constituted principles and objectives and could not be understood to establish precise, specific obligations" (para. 2.28). In rejecting this argument, the GATT panel affirmed that developing members could expect to enjoy the benefits articulated in Article XXXVI of the GATT (para. 4.30). Based on this interpretation, developing members may be able to invoke Article XXXVI to support efforts to diversify their economies with a view to addressing dominance.

Article XXXVI also recognizes the "need for positive efforts" and "individual and joint action" so that developing countries would be able to share in the growth in international trade and further their economic development. This resulted in the Agreed Conclusions of the United Nations Conference on Trade and Development (UNCTAD) Special Committee on Preferences which recognized that preferential tariff treatment accorded under a generalized scheme of preferences was key for developing countries "(a) to increase their export earnings; (b) to promote their industrialization; and (c) to accelerate their rates of economic growth" (para. I.2.). With a view to achieving these goals, the GATT contracting parties adopted the

1971 Waiver Decision, which had the effect of waiving, for a period of ten years, the obligations of Article I of the GATT 1947 in respect of the granting of tariff preferences to developing countries.

In 1979, the GATT contracting parties adopted the Decision on Differential and More Favourable Treatment, Reciprocity and Fuller Participation of Developing Countries (the "Enabling Clause"), which had the effect of making permanent the waiver contained in the 1971 Waiver Decision. The Enabling Clause is now part of the GATT 1994 and thus of the WTO agreements.

The Enabling Clause was considered by the WTO Appellate Body in *EC – Tariff Preferences*. In examining the obligation imposed on the European Communities by Article I of the GATT to afford MFN treatment to India, the Appellate Body held that the Enabling Clause:

"...excepts Members from complying with the obligation contained in Article I:1 for the purpose of providing differential and more favourable treatment to developing countries, provided that such treatment is in accordance with the conditions set out in the Enabling Clause. As such, the Enabling Clause operates as an 'exception' to Article I:1" (para. 90).

The WTO Appellate Body also interpreted footnote 3 to paragraph 2(a) of the Enabling Clause, which requires that any preferential tariff treatment under the Enabling Clause must be "non-discriminatory". The Appellate Body found that "the term 'non-discriminatory' should not be interpreted to require that preference-granting countries provide identical tariff preferences to all developing countries" (para. 155). Rather, preference-granting countries are authorized "to 'respond positively' to 'needs' that are *not* necessarily common or shared by all developing countries." Thus, developed-country members may grant different tariffs to products originating in different beneficiaries, provided that such differential tariff treatment meets the remaining conditions in the Enabling Clause. Nonetheless, WTO members granting the preferences "are required, by virtue of the term 'non-discriminatory', to ensure that identical treatment is available to all similarly-situated beneficiaries, that is, to all beneficiaries that have the 'development, financial and trade needs' to which the treatment in question is intended to respond" (para. 173).

Many WTO members have implemented preferential programmes under Part IV of the GATT 1994 and the Enabling Clause (Wang, 2005).²⁴ The 2007 *World Trade Report* has an extensive discussion of the effectiveness of these programmes, and describes some of the other measures that may be taken under provisions that provide special and differential treatment to developing countries.

(v) Trade rules and volatility

International commodity agreements (Article XX(h) of the GATT)

Price stabilization was one of the principal objectives of international commodity agreements negotiated between supplier and consumer countries. Article XX(h) provides a specific exception for measures taken under international commodity agreements. More specifically, it provides an exception for measures "undertaken in pursuance of obligations under any intergovernmental commodity agreement which conforms to criteria submitted to the contracting parties and not disapproved by them or which is itself so submitted and not so disapproved".

The Ad Note to Article XX(h) further states that "[t]he exception provided for in this subparagraph extends to any commodity agreement which conforms to the principles approved by the Economic and Social Council in its Resolution 30 (IV) of 28 March 1947". This Resolution calls for the creation of an Interim Co-ordinating Committee for International Commodity Arrangements and for UN member states to adopt the principles laid out in Chapter VII of the Havana Charter as a general guide for international action with respect to commodity problems (see sub-section 2 below).

No commodity agreement has been formally notified under Article XX(h) and measures taken under an international commodity agreement have never been challenged in GATT/WTO dispute settlement (*GATT Analytical Index*, p. 591). This provision may be of limited relevance today, at least for the natural resource sectors covered by this report. Other instruments of international law are discussed in what follows.

2. Other international law and natural resources

The WTO is part of a much broader framework of international cooperation. Many aspects of natural resources are regulated by other rules of international law outside of the WTO. Some international rules developed as customary international law, much of which was codified in international agreements in the second half of the 20th century.

(a) Relationship between WTO agreements and other international law

The WTO agreements are treaties and as such are regulated by the international rules on treaties codified in the Vienna Convention on the Law of Treaties (Abi-Saab, 2005). Likewise, the WTO is an international organization and its international personality also depends on general international law. As explained by WTO Director-General Pascal Lamy, "WTO norms are not hierarchically superior or inferior to any other norms (except *jus cogens*²⁵)" (Lamy, 2007).

Some provisions of the WTO agreements expressly refer to other international agreements. In these circumstances, the relationship between WTO and general international law is more straightforward. For example, Article 2.1 of the Agreement on Trade-Related Aspects of Intellectual Property Rights expressly incorporates several provisions of the Paris Convention for the Protection of Industrial Property of 1967. As a result, these provisions are binding on all WTO members and are subject to the WTO's dispute settlement system, as occurred in the *US – Section 211 Appropriations Act* dispute. Another example is the exception in Article XX of the GATT for measures undertaken under certain international commodity agreements.

A concern expressed by some observers is that trade-related measures taken under other international agreements, particularly multilateral environmental agreements, could be challenged in the WTO as incompatible with the obligations in the WTO agreements. This is an issue that has been discussed in the WTO Committee on Trade and Environment (CTE). The CTE has noted that only about 20 of the approximately 250 multilateral environmental agreements in force include trade provisions.²⁶ This has led some to argue "that the dimension of the problem should not be exaggerated".

The debate about the relationship between the WTO and other international agreements has also focused on the extent to which international law is applicable in disputes brought to the WTO. It is generally accepted that only claims brought under the WTO agreements may be brought to the WTO dispute settlement system (Van Damme, 2009). This means that a WTO member could not bring a dispute to the WTO claiming a violation of another international agreement or general international law, unless those obligations have been incorporated in the WTO agreements. There is, however, less clarity about the extent to which non-WTO agreements and general international law may be applied by panels and the Appellate Body when resolving a dispute brought under the WTO agreements.

It has been suggested that the WTO's Dispute Settlement Understanding (DSU) does not provide an explicit delimitation of applicable law in WTO dispute settlement (Van Damme, 2009). Article 3.2 of the DSU provides that one of the functions of the WTO dispute settlement system is "to clarify the existing provisions of those agreements in accordance with customary rules of interpretation of public international law." The WTO Appellate Body has interpreted the reference to "customary rules of interpretation of public international law" as including the rules codified in Articles 31 and 32 of the Vienna Convention on the Laws of Treaties. In addressing this issue, the Appellate Body made the often-quoted statement that the GATT 1994 cannot "be read in clinical isolation from public international law" (*US – Gasoline*).

There is little disagreement about the applicability of the rules of interpretation codified in Articles 31 and 32 of the Vienna Convention in WTO dispute settlement.

There is, however, significant divergence of opinion as to whether any scope exists in WTO dispute settlement to apply rules of international law other than those codified in Articles 31 and 32.

The general rule of interpretation set out in Article 31 states that "(a) treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose". Paragraph (3)(c) of Article 31 provides that, together with the context, there shall be taken into account "any relevant rules of international law applicable in the relations". For some observers, Article 31(3)(c) of the Vienna Convention provides an avenue for a WTO adjudicator to refer to other international agreements or to general international law when interpreting provisions of the WTO agreements. One issue here is whether only the disputants or all WTO members would have to be parties to the other international agreement for it to have relevance pursuant to Article 31(3)(c).

The panel in *EC – Approval and Marketing of Biotech Products* took the view that, for an international agreement to be relevant under Article 31(3)(c), all WTO members would have to be parties to the agreement. The panel's approach has been criticized by some academics (Howse, 2008) and by the Rapporteur of the UN International Law Commission's Study Group on Fragmentation, who wrote that the panel's approach "makes it practically impossible ever to find a multilateral context where reference to other multilateral treaties as aids to interpretation under article 31(3)(c) would be allowed" (International Law Commission, 2006).

The Appellate Body has occasionally sought guidance from other international agreements or general international law when interpreting provisions of the WTO agreements. In *US – Shrimp*, for example, the Appellate Body referred to various international environmental instruments when interpreting the term "exhaustible natural resources" in Article XX(g) of the GATT 1994. Relying on the principle of effectiveness in treaty interpretation, the Appellate Body, in that case, also emphasized the need to interpret the term "exhaustible natural resources" in an evolutionary manner, noting that Article XX "is not 'static' in its content or reference" (para. 130).²⁷

It is important to distinguish the situation where an adjudicator seeks "guidance" from broader sources of international law, as the Appellate Body did in *US – Shrimp*, from the situation where another international treaty or a rule of general international law is considered to be binding on the WTO members that are parties to the dispute.

Some see little scope, if any, for the application of other international agreements or general international law as binding rules in the WTO (Marceau, 1999; Trachtman, 1999). They find support for their position in the last sentence of Article 3.2 of the DSU, which provides that dispute settlement rulings "cannot add to or diminish the rights and obligations provided in the covered

agreements". Others, however, see some scope for the application of outside international rules in the WTO. Pauwelyn (2003) has argued that another international treaty or a rule of general international law may apply where a matter is not regulated by the WTO agreements. He has also noted that there may be circumstances where a WTO member could argue that its conduct conforms to another international agreement and this would constitute a defence to a claim that the conduct violates its WTO obligations.

The debate about the relationship between the WTO agreements and other international law is not settled. The UN International Law Commission has identified several principles that may be of assistance when seeking to understand the relationship between different international norms (International Law Commission, 2006). The WTO Agreement itself offers avenues for members to reconcile their WTO obligations with those under other international agreements. If WTO members want to privilege an obligation in another international agreement that is in potential conflict with their obligations under the WTO, they can adopt a waiver under Article IX:3 of the WTO Agreement, thus avoiding any uncertainties about the relationship between the two. This is how WTO members proceeded in relation to certain measures taken as part of international efforts to control the trade of "conflict" diamonds, known as the "Kimberley process" (see Section E.2(b) below).

(b) Trade in natural resources and other international law

(i) Sovereignty over natural resources

The WTO does not regulate ownership of natural resources. An important body of international law concerns sovereignty over territories, land masses, lakes, rivers, and areas of the ocean. These rules are also relevant for purposes of determining which state has sovereignty over the natural resources that are present in these territories, land masses and waters. Claims of sovereignty by states over territories and other land masses, as well as the oceans and seabed, have often been driven by a desire to assert control over the natural resources that may be contained in these areas.

It is universally accepted that the subsoil belongs to the state that has sovereignty over the surface (Brownlie, 2008). A state is also sovereign over any internal waters, such as lakes and rivers wholly within its territory, land-locked seas and historic bays. Sovereignty extends to the riverbed or lakebed of any internal waters (Brownlie, 2008). The rights and obligations of states in relation to rivers and lakes that border more than one state are frequently established by treaty.

Coastal states have asserted sovereignty over the continental shelf, which is a stretch of seabed that separates the deep ocean floor from the coast of land masses and is, in geological terms, part of the continent.

The continental shelf can have significant deposits of oil and gas, and its seabed has sedentary fishery resources (Brownlie, 2008).

The 1958 Convention on the Continental Shelf recognizes that the "coastal state exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources" (Article 2.1, Continental Shelf Convention). This is an exclusive right and no-one may explore or exploit the natural resources on the continental shelf without the express consent of the coastal state. The natural resources covered "consist of the mineral and other nonliving resources of the seabed and subsoil together with living organisms belonging to sedentary species" (Article 2.4, Continental Shelf Convention). The status of the waters above the continental shelf is not affected by a coastal state's rights over its continental shelf (Article 3, Continental Shelf Convention).

Coastal states have sovereignty over their territorial sea, which includes the seabed and subsoil. Although the breadth of the territorial sea was debated for some time, most coastal states today claim a territorial sea of 12 miles, which is the limit established in the 1982 United Nations Law of the Sea Convention (Brownlie, 2008). Additionally, some states claim a fishing zone of 200 miles (Brownlie, 2008). A larger number of states claim an Exclusive Economic Zone (EEZ) of 200 miles and an EEZ of 200 miles is recognized also under the 1982 Convention on the Law of the Sea (Article 57, UNCLOS).

Within the EEZ, the coastal state enjoys "sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the sea-bed and its sub-soil, and with regard to other activities for the economic exploration and exploitation of the zone, such as the production of energy from water, currents and winds" (Article 56, UNCLOS). Coastal states also have jurisdiction within their EEZ as regards the protection and preservation of the marine environment (Article 56, UNCLOS).

The high seas are considered as "being open to all nations [and] no State may validly purport to subject any part of them to its sovereignty" (Article 2, Convention on the High Seas). Thus, freedom of fishing is generally recognized on the high seas (Brownlie, 2008). The 1982 Law of the Sea Convention makes certain changes to the regime of the high seas. First, it provides that the high seas do not include the EEZs (Articles 55 and 86, UNCLOS; Brownlie, 2008). Furthermore, the Convention establishes a special regime for the resources of the seabed and subsoil that are outside national jurisdictions (Brownlie, 2008). The Law of the Sea Convention declares that the Area, defined as the seabed and ocean floor and subsoil thereof and its resources, are beyond the limits of national jurisdiction and therefore are the common heritage of mankind (Articles 133 and 136, UNCLOS). An International Sea-Bed Authority is established under the Law of the Sea Convention and the Authority is given exclusive responsibility for organizing and controlling all activities in the Area so defined.

The fact that the high seas remain open to the use and enjoyment of all states and that many fish are migratory (referred to in the economic literature as fugitive resources) poses challenges for the sustainable use of these resources. The Law of the Sea Convention and the UN Fish Stocks Agreement attempt to regulate fishing practices on the high seas and in relation to fugitive species, but significant challenges remain. These challenges are discussed in sub-section 3.

Several states have made claims over the polar regions. These claims have gained prominence in recent years as some predict that global warming could make the polar areas more accessible to oil and minerals exploration, fishing, and shipping (Ebinger and Zambetakis, 2009; Dutter, 2006). There is no treaty regime for the Arctic region. The Arctic Council, which was established in 1996, serves as a forum for discussion and collaboration. Claims relating to the Arctic region involve maritime boundaries in relation to areas of the Arctic Ocean or the continental shelf. These claims are made under customary international law, the Law of the Sea Convention or the Convention on the Continental Shelf.

A rule of particular relevance for the Arctic region is the provision in the Law of the Sea Convention under which a state may try to demonstrate that its continental shelf extends beyond 200 nautical miles from its shoreline. If the claim is successful, the state obtains legal rights to exploit oil, gas and minerals in the extended zone (Ebinger and Zambetakis, 2009). States only have one opportunity to claim an extension of the continental shelf and they must do so within ten years of signing the Law of the Sea Convention. Several states have done so already, sometimes making headlines by planting a flag on the seabed (Ebinger and Zambetakis, 2009; Reynolds, 2007).

In contrast to the Arctic region, a treaty regime was set up for Antarctica in 1959. The Antarctic Treaty, however, expressly states that it does not affect the territorial claims made by some states (and denied by others), nor provides a basis for the assertion of territorial sovereignty. The purpose of the Antarctic Treaty is to ensure "in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes". It establishes "freedom of scientific investigation in Antarctica" and provides a framework for cooperation. The Protocol for Environmental Protection, which entered into force in 1998, prohibits all activities relating to mineral resources other than scientific research. A Convention on the Regulation of Antarctic Mineral Resource Activities was negotiated in 1988. It set out rules on prospecting, exploration and the development of mineral resources activities. The Convention never entered into force because not all of the states with territorial claims over Antarctica became parties to it (U.S. Department of State, 2002).

Antarctica is thought to hold reserves of oil, gas, coal, iron, chromium and other precious metals (Dutter, 2006). Concerns have been raised over "bioprospecting" (searching for and collecting biological resources) and

the commercial exploitation of scientific research of biological organisms in Antarctica. A study by the UN University in Tokyo reportedly found that 92 patents referring to Antarctic organisms or molecules extracted from them have been filed in the United States, and a further 62 patents have been filed in Europe (Sample, 2004).

Issues concerning sovereignty over natural resources were raised in the context of the debate that followed the post-Second World War wave of nationalization of property held by foreign corporations in Eastern Europe, Africa, the Middle East and in several Latin American countries (Lowenfeld, 2003). The debate concerned whether the nationalizing state had an obligation to compensate the foreign investor and, if so, how this compensation should be determined. In 1962, the UN General Assembly adopted a Resolution on "Permanent Sovereignty Over Natural Resources", which stated that the "right of peoples and nations to permanent sovereignty over their natural wealth and resources must be exercised in the interest of their national development and of the well-being of the people of the State concerned."

The General Assembly adopted a further Resolution in 1973 stating "that the application of the principle of nationalization carried out by States, as an expression of their sovereignty in order to safeguard their natural resources, implies that each State is entitled to determine the amount of possible compensation and the mode of payment, and that any disputes which might arise should be settled in accordance with the national legislation of each State carrying out such measures". In 1974, the UN General Assembly adopted a Resolution entitled "Charter of Economic Rights and Duties of States", which declared that "[e]very State has and shall freely exercise full permanent sovereignty, including possession, use and disposal, over all its wealth, natural resources and economic activities."

There is no provision in the WTO that speaks directly to the issues of ownership of natural resources or the allocation of natural resources between states and foreign investors. Nor does the WTO dispute settlement system provide a means for foreign investors to obtain monetary redress for any harm to their investment done by the host government (bilateral investment treaties are discussed below in Section E.2(b)(v)). The WTO provides only for state-to-state dispute settlement and the remedies are generally prospective and non-monetary.

(ii) Price stability, addressing terms of trade, and rent-shifting

The Havana Charter for an International Trade Organization recognized that the "special difficulties" confronting primary commodities "may, at times, necessitate special treatment of the international trade in such commodities through inter-governmental agreement" and included an entire chapter with provisions on international commodity agreements (Havana Charter, chapter VI).

International commodity agreements encompassed both producer and consumer countries. Among their stated objectives were to: i) prevent or alleviate the serious economic difficulties which may arise when adjustments between production and consumption cannot be effected by normal market forces alone as rapidly as circumstances require; ii) prevent or moderate pronounced fluctuations in the price of a primary commodity; and iii) maintain and develop the natural resources of the world and protect them from unnecessary exhaustion (Havana Charter, Article 57). These objectives were later recognized in Resolution 30(IV) adopted by the UN Economic and Social Council and became the basis for the work of the Interim Co-ordinating Committee for International Commodity Arrangements. UNCTAD broadened the objectives of international commodity agreements in the 1960s by including increased export earnings for developing countries, re-allocation of resources, and increased consumption (Gariepy, 1976).

International commodity agreements were established for three products covered by this report: tropical timber, natural rubber and tin. The only one that remains operational today is the International Tropical Timber Agreement (ITTA), which was first negotiated in 1983. The ITTA however, has been described as "no conventional commodity agreement", but rather "as much an agreement for forest conservation and development as for trade". (See the International Tropical Timber Organization (ITTO) website: www.itto.int). The International Tin Agreement operated from 1955 to 1985, while the International Natural Rubber Agreement was in force between 1979 and 1999. Both of these agreements tried to stabilize prices using buffer stocks and export controls. A difficulty arising with these agreements concerned divergent views on the distinction between interventions that stabilized prices and those that affected price trends. As noted earlier, a specific exception is provided in Article XX(h) of the GATT for measures undertaken under international commodity agreements that conform to the principles approved by the UN Economic and Social Council in its Resolution 30 (IV) of 28 March 1947.

A number of commodity-specific agreements exist among producer countries, the most relevant of which is the Organization of the Petroleum Exporting Countries (OPEC).²⁸ As it does not include consumer countries, OPEC is not understood to be an international commodity agreement and thus the exception in Article XX(h) would not be applicable. However, Desta (2008) has suggested that this could be changing. He relies on paragraph 95 of the Doha Draft Modalities for Agriculture, which states that "[t]he general exceptions provisions of Article XX(h) of GATT 1994 shall also apply to intergovernmental commodity agreements of which only producing countries of the concerned commodities are Members".

The primary aim of OPEC is "the coordination and unification of the petroleum policies of Member Countries and the determination of the best means for safeguarding their interests individually and collectively",

which includes “devis[ing] ways and means of ensuring the stabilization of prices in international oil markets with a view to eliminating harmful and unnecessary fluctuations” (Article 2, OPEC Statute). OPEC pursues this aim by recommending oil production targets to its members (Crosby, 2009).

Twenty-eight advanced economies that are consumers of oil have created the International Energy Agency (IEA).²⁹ The IEA was created during the oil crisis of 1973-74, and its principal mandate was to coordinate measures in times of oil supply emergencies. Its mandate has been broadened beyond oil crisis management and now also encompasses issues relating to energy efficiency, climate protection and energy technology collaboration. Producer and consumer countries discuss issues relating to energy resources and markets in the International Energy Forum (Selivanova, 2007).

(iii) Regional and bilateral agreements

Some regional and bilateral trade agreements include obligations that go beyond WTO commitments. These agreements generally provide for more favourable tariff treatment for the products covered.³⁰ They may also include rules that go beyond WTO disciplines. For example, Article 314 of the North American Free Trade Agreement (NAFTA) prohibits a party from adopting or maintaining “any duty, tax or other charge on the export of any good to the territory of another Party, unless such duty, tax or charge is adopted or maintained on: a) exports of any such good to the territory of all other Parties; and b) any such good when destined for domestic consumption.”³¹

Some of the bilateral agreements that the European Union has concluded also include additional disciplines on the use of export taxes. Article 17(1) of the agreement concluded with Algeria states that “[n]o new customs duties on imports or exports or charges having equivalent effect shall be introduced in trade between the Community and Algeria, nor shall those already applied upon entry into force of this Agreement be increased”. The agreement between the European Union and South Africa contains a similar provision, while the agreement with Croatia calls for the abolition of “any customs duties on exports and charges having equivalent effect” upon its entry into force.

The NAFTA has a chapter on energy and petrochemicals, which sets out specific rules for these sectors. It eliminated import tariffs and quantitative restrictions, but allowed Mexico to maintain a licensing system for petroleum and electricity trade (Hufbauer and Schott, 2005). Minimum and maximum import and export prices are prohibited, while domestic prices are not regulated. The chapter also clarifies that energy regulatory measures – defined as “any measure by federal or sub-federal entities that directly affects the transportation, transmission or distribution, purchase or sale, of an energy or basic petrochemical good” – are subject to the disciplines on national treatment, import and export

restrictions, and export taxes. Another provision of interest is Article 605, which defines the circumstances when a party may adopt or maintain a restriction under Article XI:2(a) or XX(g), (i) or (j) of the GATT in relation to the export of energy or a basic petrochemical good.³²

An agreement that is of particular relevance to some of the sectors covered by this report is the Energy Charter Treaty (ECT), which came into force in 1998. The ECT has been signed by 51 states, the European Union and the European Atomic Energy Community (Euratom). Its membership comprises energy producers, consumers and transit states, including some that are not WTO members.

According to some commentators, the ECT has a “unique role as the only energy-specific multilateral agreement that covers all major aspects of international energy turnover: trade, transit, investment and energy efficiency” (Rakhmanin, 2009). The ECT also includes provisions on competition, transfer of technology, and access to capital. Victor and Yeuh (2010) point out that the effectiveness of the ECT has been affected by a lack of full participation in the treaty by Russia. Russia has signed the ECT but indicated in 2009 that it did not intend to become a contracting party to the ECT.

The ECT has been described as “primarily a multilateral investment protection treaty” (Selivanova, 2007). Nevertheless, the ECT includes a number of trade provisions, some of which are incorporated by reference to the WTO. ECT provisions on energy trade are based on the GATT/WTO principles of non-discrimination, national treatment, prohibition of quantitative export and import restrictions and access to markets on an open and transparent basis (Herman, 2010). Article 4 of the ECT provides that nothing in the treaty shall derogate, as between parties that are parties to the GATT, from the provisions of the GATT as applied between them. According to Selivanova, “[n]on-derogation from the provisions of the GATT/WTO is a core principle” of the ECT. GATT/WTO rules that are incorporated by reference apply to energy trade relations between the contracting parties of the ECT, including where a party is not a WTO member.

In relation to energy transit, “the (ECT) contains in its Article 7 several disciplines that are more specific and detailed than those of Article V of the GATT 1994” (Ehring, 2007). These include the obligation not to obstruct arbitrarily the creation of new capacity if transit cannot be carried out through existing infrastructure due to lack of capacity, and the obligation not to interrupt or reduce existing transit flows, even if there is a dispute with another country concerning this transit. There is a special conciliation procedure foreseen for resolution of transit disputes.³³ The Transit Protocol to the ECT, the negotiations of which are pending, would elaborate in more detail some specific aspects of energy transit, such as conditions for access to networks and methodologies for calculation of transit tariffs.

The ECT does not prescribe the structure of the domestic energy sector, the ownership of energy

companies or oblige member countries to open up their energy sector to foreign investors. The ECT expressly recognizes national sovereignty over energy resources: each member country is free to decide how, and to what extent, its national and sovereign energy resources will be developed, and also the extent to which its energy sector will be opened to foreign investments (Article 18 of the ECT). At the same time, there is a requirement that rules on the exploration, development and acquisition of resources be publicly available, non-discriminatory and transparent.

Once a foreign investment is made, the ECT is designed to provide a reliable and stable interface between this investment and the host government. Investors are protected against the most important political risks, such as discrimination, expropriation and nationalization,³⁴ breach of individual investment contracts,³⁵ damages due to war and similar events, and unjustified restrictions on the transfer of funds. Host states are obliged to grant to investments from other ECT members as well as to related activities, such as management, maintenance, use, enjoyment or disposal, treatment at least as favourable as that accorded to the investments of their own investors or of investors of other countries. The non-discrimination obligation is applicable only to the post-investment stage, i.e. only to investments already made.

As regards the pre-investment phase,³⁶ there is only a “best endeavour” obligation to grant non-discriminatory treatment. Furthermore, ECT members must endeavour not to introduce new restrictions on foreign investors concerning the making of an investment (“standstill”) and to progressively reduce remaining restrictions (“rollback”).

(iv) *Externalities*

A large number of international agreements establish mechanisms for states to cooperate in dealing with international externalities, many of which relate to the protection of the environment. There are more than 250 multilateral environmental agreements currently in force. They cover a broad array of issues, such as endangered wild fauna and plants (Convention on International Trade in Endangered Species), fisheries (United Nations Fish Stocks Agreement), tropical timber (International Tropical Timber Agreement), climate change (United Nations Framework Convention on Climate Change and the Kyoto Protocol), and hazardous wastes (Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal).

As noted earlier, about 20 of these multilateral environmental agreements include trade provisions.³⁷ For example, the Convention on International Trade in Endangered Species subjects trade in certain specimens of wild animals and plants to controls through the use of a licensing system. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal imposes

prohibitions on the exportation of hazardous wastes. The UN Fish Stocks Agreement allows parties to prohibit landings and trans-shipments where it has been established that the catch has been taken in a manner which undermines the effectiveness of sub-regional, regional or global conservation and management measures on the high seas.

Some observers have expressed concern about the relationship between these trade-related measures in multilateral environmental agreements and the international trade rules in the WTO agreements. The need to ensure coherence between multilateral efforts aimed at preserving the environment and the multilateral trading regime has been emphasized both in international environmental discussions and at the WTO. On the environmental side, the need for coherence is expressly acknowledged in Principle 12 of the Rio Declaration on Environment and Development, which reads:

“States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.”

The Preamble of the WTO Agreement recognizes that the expansion of trade and production must allow “for the optimal use of the world’s resources in accordance with the objective of sustainable development” and must “seek to protect and preserve the environment”. The 1994 Ministerial Decision on Trade and Environment states “that there should not be, nor need be, any policy contradiction between upholding and safeguarding an open, non-discriminatory and equitable multilateral trading system on the one hand, and acting for the protection of the environment, and the promotion of sustainable development on the other”.

Article XX of the GATT 1994 provides exceptions for measures “necessary to protect human, animal or plant life or health” or “relating to the conservation of exhaustible natural resources”. The TBT Agreement allows WTO members to adopt technical regulations to protect human health or safety, animal or plant life or health, or the environment. In the case of trade in services, Article XIV of the GATS permits WTO members to adopt or enforce measures necessary to protect human, animal or plant life or health.³⁸

To date, no trade measures taken under a multilateral environmental agreement have been challenged as being incompatible with WTO obligations. Multilateral environmental agreements were referred to in the *US – Shrimp* dispute, which involved a restriction on imported shrimp harvested without the use of devices that prevent the accidental capture of sea turtles. One of the issues raised in that case was whether the term "exhaustible natural resources" covered living organisms or only covered non-living mineral resources. The Appellate Body concluded that the term included living organisms after referring to several international environmental instruments, such as the Convention on Biological Diversity and Agenda 21.

Another issue that was raised in the *US – Shrimp* dispute was whether the measure was applied consistently with the chapeau of Article XX of the GATT 1994, which requires that it not be "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". In the original proceedings, the WTO member applying the import restriction was found not to have met this requirement because it had "negotiated seriously" with one group of exporting countries, but not with the exporting countries that had initiated the dispute. This was deemed to have a discriminatory effect and was considered unjustifiable (Appellate Body Report, *US – Shrimp*, para. 172).

However, in a subsequent proceeding, the conditions in the chapeau of Article XX were found to have been met after it was shown that the WTO member applying the import restriction had made "serious, good faith efforts ... to negotiate an international agreement" with the group of exporting countries concerned. Those proceedings also clarified that "it is one thing to prefer a multilateral approach in the application of a measure that is provisionally justified under one of the subparagraphs of Article XX of the GATT 1994; it is another to require the conclusion of a multilateral agreement as a condition of avoiding 'arbitrary or unjustifiable discrimination' under the chapeau of Article XX". No such requirement was found in that case (Appellate Body Report, *US – Shrimp* (Article 21.5 – *Malaysia*), paras 124 and 134).

Another concern is that disputes involving environmental measures may be brought to the WTO and simultaneously to another forum, and that each may issue conflicting decisions. WTO members have so far avoided such situations. This is illustrated by a dispute between Chile and the EU concerning the landing of swordfish.

In April 2000, the EU requested consultations with Chile in relation to Chilean legislation that prohibited EC vessels from unloading their swordfish in Chilean ports either to land them for warehousing or to tranship them onto other vessels (WT/DS193/1). The EU alleged that such a prohibition made transit through Chilean ports impossible, and as such was inconsistent with Article V of the GATT 1994. Chile, for its part, asserted that the

EU was required, under its obligations in UNCLOS, to enact and enforce conservation measures for its fishing operations on the high seas, and Chile initiated proceedings against the EU before the International Tribunal for the Law of the Sea (ITLOS). However, in March 2001, the EU and Chile informed the Dispute Settlement Body that they had come to a provisional arrangement concerning this dispute and accordingly had agreed to suspend the WTO panel process. Chile and the EU eventually reached a settlement of the dispute and, at their request, the ITLOS Tribunal discontinued the case on 16 December 2009.

Some consider it advisable to spell out further the relationship between the WTO and multilateral environmental agreements. Thus, at the 2001 Doha Ministerial Conference, WTO members agreed to negotiate on the relationship between WTO rules and the multilateral environmental agreements, particularly those that contain "specific trade obligations". These negotiations take place in special sessions of the Trade and Environment Committee. Members have agreed that the scope of these negotiations would be limited to the applicability of WTO rules to WTO members that have signed the multilateral environmental agreement under consideration.

Corruption is another issue on which states have cooperated to address an international externality. The OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions requires its signatories to criminalize the bribing of foreign officials in international business transactions. The Extractive Industries Transparency Initiative (EITI) is a coalition of governments, companies, civil society groups, investors and international organizations that seeks to promote improved governance in resource-rich countries through the verification and publication of company payments and government revenues from oil, gas and mining.

An international initiative that has been the subject of discussion in the WTO is the Kimberley Process Certification Scheme (KPCS). This is a joint initiative of governments, industry and civil society that seeks to stem the flow of "conflict diamonds". These are rough diamonds used by rebel movements to finance conflicts aimed at undermining legitimate governments, as described in relevant United Nations Security Council resolutions. The KPCS obliges its members to ensure that a Kimberley Process Certificate accompanies each shipment of rough diamonds being exported. The document certifies that conflict diamonds are not included in a shipment of rough diamonds.

In 2003, the WTO General Council approved a request by 11 members of the KPCS to waive the application of certain GATT rules with respect to measures taken to prevent the export of conflict diamonds in accordance with the KPCS. In particular, the WTO General Council waived the application of Article I:1, Article XI:1 and Article XIII of the GATT for the period 1 January 2003 to 31 December 2006 for 11 WTO members (WT/L/518).³⁹ In December 2006, the Kimberley

Waiver was extended to 2012, and the members to which it applies expanded to 19 (WT/L/676).

(v) "Hold-up"

Bilateral investment treaties (BITs) play an important role, particularly in relation to minerals and energy resources. These treaties seek to resolve what is known as the hold-up problem⁴⁰, by constraining the host government from changing the rules that apply to the investor once the investment has been made (Guzman, 1998). It is estimated that there are more than 1,100 BITs in force, with more than 800 having been concluded since 1987, and more than 155 countries are parties to a BIT. Most BITs are between developed and developing countries, but a substantial number of BITs have been concluded between developing countries (Lowenfeld, 2003).

BITs require the host state to give foreign investors "fair and equitable treatment" and "full protection and security" (Lowenfeld, 2003). They also prohibit the host state from discriminating against foreign investors and from taking their property without compensation. Most BITs provide that "expropriation is lawful and not inconsistent with the BITs if it (i) is carried out for a public purpose; (ii) is non-discriminatory; (iii) is carried out in accordance with due process; and (iv) is accompanied by payment of compensation" (Lowenfeld, 2003). BITs also provide for recourse to international arbitration when an investor considers that a host state has violated its obligations under the BIT. One of the most frequently used fora for such arbitration is the World Bank's International Centre for Settlement of Investment Disputes.⁴¹ Investment protection provisions also may be found in other international agreements, including multilateral sector-specific agreements, such as the Energy Charter Treaty, and in regional or bilateral trade agreements, such as NAFTA.

The WTO does not regulate investment, except for services provided under the so-called mode 3 (see Box 26). At the Ministerial Conference held in Singapore in 1996, WTO members agreed to establish a working group to examine the relationship between trade and investment.

In 2001, at the Doha Ministerial Conference, WTO members recognized "the case for a multilateral framework to secure transparent, stable and predictable conditions for long-term cross-border investment, particularly foreign direct investment, that will contribute to the expansion of trade" and agreed "that negotiations will take place after the Fifth Session of the Ministerial Conference on the basis of a decision to be taken, by explicit consensus, at that session on modalities of negotiations". WTO members also agreed on a work programme for the Working Group on the Relationship Between Trade and Investment. Nevertheless, at a General Council meeting held in 2004, members decided that the relationship between trade and investment would no longer form part of the Doha Work Programme and that "therefore no work towards negotiations on any of these issues will take place within the WTO during the Doha Round".

3. Trade-related issues affecting natural resources: Challenges ahead

As discussed in previous sections, natural resources display a number of characteristics that make a case for government intervention to improve social welfare, as compared to the free trade outcome. Much of the analysis of this report has focused on GATT/WTO aspects of trade in natural resources. Some of the issues raised below are not necessarily within the purview of the WTO, but they are nevertheless discussed here as they appear relevant to international cooperation in the field of natural resources.

As far as our review of WTO rules is concerned, it has been shown that these provide scope for governments to address market failures related to the specific nature of natural resources. At the same time, certain measures limiting access to natural resources are prohibited by WTO rules. Tariffs on most natural resources, with the exception of fish, are relatively low and the number of disputes involving natural resources is not particularly high. None of this means, however, that trade in natural resources is free of contention and varying views on the preferred nature and content of multilateral trading rules. Differences of view among WTO members arise in a number of areas, particularly in relation to export restrictions and subsidies. Concerns have also been raised in regard to possible negative interactions between WTO rules and commitments and conservation policies.

Issues taken up here, which have emerged in various contexts, include export restrictions, subsidies, domestic and international regulation, investment-related challenges in natural resource industries, competition questions, transit and transportation, the distinction between goods and services in relation to natural resources, intellectual property rights and natural resources conservation. This list does not pretend to be exhaustive, nor is there any suggestion in the selection of these issues that they all fall within the scope of agreed WTO competence.

(a) Export restrictions

(i) Export taxes

As discussed in sub-section 1, WTO rules prohibit the use of quantitative export restrictions with some exceptions but it has been generally recognized that they do not prohibit the use of export taxes or duties. Sub-section 1 also explained that the panel on *US – Exports Restraints* did not find that certain export restraints were subsidies that would allow countervailing measures to be taken under the Agreement on Subsidies and Countervailing Measures.⁴²

WTO members could have made binding commitments to reduce their export taxes (as they have done with respect to import tariffs), but most of them have not.

Box 28: What is the economic rationale for trade agreements?

Economists have identified two main reasons why governments sign a trade agreement: first, to avoid “beggar-thy-neighbour” policies that are unilaterally attractive but multilaterally destructive; second, to avoid “beggar-thyself” policies that are attractive in the short run but do not serve the long run interests of society (Bagwell and Staiger, 2009; World Trade Organization, 2007).

The beggar-thy-neighbour problem is based on the idea that trade policy decisions of one country affect the welfare of another country. While it is by no means the only beggar-thy-neighbour effect, the formal literature focuses on the terms-of-trade effect (Johnson, 1954). The purpose of a trade agreement such as the WTO is, therefore, to make sure that governments account for these effects when they make policy.

Consider two large open economies able to affect global demand and supply and, hence, world prices in a specific sector. By imposing an import tariff, a country increases the price of imports for consumers but lowers the price received by foreign exporting firms. This price change constitutes a terms-of-trade gain at the expense of the trading partner, which experiences a terms-of-trade loss. As countries interact strategically in the international arena, the trading partner will react by imposing a tariff on its imported good, also improving its terms of trade to the detriment of the other economy. Eventually the economy ends up in an equilibrium with inefficiently high tariffs and low trade volumes, which economists generally refer to as a terms-of-trade driven “Prisoners’ Dilemma”. A trade agreement like the GATT/WTO contains a set of rules and principles, such as non-discrimination and reciprocity, that facilitate trade cooperation and allow members to escape this non-cooperative behaviour and achieve higher welfare (Bagwell and Staiger, 1999; Bagwell and Staiger, 2002).⁴³

The other reason why countries sign a trade treaty is because governments may also face problems in committing to follow a welfare-maximizing trade policy. First, an efficient trade policy may be time inconsistent. This can arise when a government’s policy preferences change as circumstances change over time. As a result, an efficient but time-inconsistent trade policy may not be credible in the eyes of private agents (Staiger and Tabellini, 1987). Second, an efficient trade policy may not be convenient for a government under political pressures, such as lobbying from import-competing sectors (Maggi and Rodriguez-Clare, 1998). Under these scenarios, a trade agreement can be a welfare-enhancing institutional reform as it may provide an effective commitment device to tie the hands of member governments to an efficient policy. The WTO system, in this view, provides an anchor to avoid beggar-thyself policies.

The two approaches are complementary in the sense that one does not exclude the other, and several recent papers provide empirical support for both theories. Broda et al. (2008) and Bagwell and Staiger (2006a) find evidence consistent with the terms-of-trade approach, while Staiger and Tabellini (1999) and Tang and Wei (2009) substantiate the belief that WTO commitments address credibility problems.

A trade agreement, like any other international cooperation agreement, needs to be self-enforcing. In the absence of a supranational authority that can punish governments that deviate, members need to find it in their own interest to abide by international rules. Economic theory has formalized the requirement of self-enforcement in trade agreements by introducing the concept of repeated games.⁴⁴ Trade cooperation arises as countries balance the gains of deviating from the agreement against the ensuing losses from retaliation (i.e. trade sanctions). For this reason, the GATT/WTO system allows for retaliatory measures that can be implemented when members do not adhere to their commitments.

However, several countries that have recently joined the WTO, including China, Mongolia, Saudi Arabia, Ukraine and Viet Nam have been requested by existing members to negotiate commitment “schedules” for export duties in the context of their accession negotiations.⁴⁵ In a number of cases, the export duties covered by such commitments concern natural resources. The extent to which these commitments reduce or remove export taxes varies across members.

Divergent interests in relation to export taxes have come to the fore in the context of the Doha Round negotiations on market access for non-agricultural products. In their initial submissions to the Negotiating Group on Market Access, two members noted that negotiations should also address export restrictions, including export duties.⁴⁶ One of those members tabled

a proposal for a WTO Agreement on Export Taxes aimed at the elimination of all such measures over time, allowing only for a small number of general exceptions and for limited flexibilities for developing countries (Job(07)/43). This proposal, which was motivated by concerns that export taxes can be used to restrict access to crucial raw materials and input goods and can thereby impede growth and development of other WTO members, met with critical reactions from a number of other members who argued that export duties are legitimate tools of economic development.

The proposal was subsequently revised and the revised submission was included in the fourth revision of draft modalities for non-agricultural market access. The revised approach represents a shift from a general prohibition of export taxes, with exceptions based on

GATT rules, to the establishment of rules on transparency and predictability, which, in the view of the proponents, could be ensured through scheduling commitments and the binding of members' export taxes (i.e. setting upper limits).

Export policy has also been the subject of discussion in the agriculture negotiations. This is reflected in the draft negotiating modalities⁴⁷ on export prohibitions and restrictions. The proposed text on this topic seeks to improve transparency and accountability. It also seeks to shrink the duration of quantitative export restrictions on agricultural products, which are permitted under Article XI.2(a) of GATT 1994 as temporary measures to relieve critical shortages. Several members also made proposals on export taxes in the agricultural sector. Many of the proposals seek to restrict or eliminate the use of export taxes. They were made either in the context of the post-Uruguay Round discussions on agriculture that fed into the Doha Round, or they were made in the first two or three years of the Doha Round. The proposals have received limited attention in recent years.

In this context, a number of regional and bilateral trade agreements prohibit the application of customs duties, taxes and charges having equivalent effects on exports of originating goods traded between parties to the agreements.⁴⁸

The economic theory of trade agreements sheds some light on the reasons why governments may be interested in negotiating restrictions on their use of export tariffs.⁴⁹ The reasoning is based on the idea that from an economic point of view, export taxes are the mirror image of tariffs. It is thus not surprising that the same terms-of-trade argument for international cooperation that applies to import tariffs also applies to export taxes. A large country can improve its terms of trade at the expense of its trading partners by imposing export restrictions. The reduction in supply will push up the world price. As in the tariff case, two large countries restricting their exports to each other could end up in a "Prisoners' Dilemma" situation if they did not cooperate (see Box 28). If this is the case, a trade agreement that would allow trading partners to commit to export tax reductions would be beneficial. Note that this argument does not apply to export taxes on natural resources only. It applies more generally to export taxes imposed by countries when they are large enough to affect world prices.

Commitments to reduce export taxes could be exchanged against commitments to reduce either export taxes or import tariffs. Consider the case where an importing country imposes escalating tariffs along a production chain in a natural resource sector with the result that higher levels of processing of a good attract higher tariffs. The country exporting a natural resource may decide to impose an export tax to offset the effects of the import tariffs. In this particular case, an agreement involving a commitment on export taxes on the one side and a commitment on import tariffs on the other would be mutually beneficial.

In theory, the rationale for allowing governments to negotiate commitments on export taxes could be extended to certain domestic policy instruments. This is because basic economic arguments can be used to show the conceptual equivalence between certain trade policy instruments and certain domestic policy instruments. As explained in Section D, in the absence of domestic consumption, a domestic production quota is equivalent to an export quota. Yet, while an export quota is prohibited by Article XI of the GATT, most observers consider that a production quota is not subject to this prohibition. Instead, many consider that decisions concerning how much of a natural resource is extracted or harvested fall within the sovereignty of each state (see sub-sections 1 and 2 above). Similarly, an export tax is equivalent to a consumption subsidy. Also, in the absence of domestic production, a consumption tax is equivalent to a tariff. Given this equivalence, depending on the circumstances, governments may have reasons to prefer using a domestic policy instrument rather than the equivalent trade policy measures.

Consider the market for oil. Exporters typically use production restrictions while importers typically use consumption taxes. Like an import tariff, a consumer tax in the importing country will reduce the domestic – and, hence, global – demand for oil and lower its world price, shifting part of the resource rent (i.e. the premium that the producer or exporter receives above opportunity cost) from the exporting country to the importing country. Similarly, like an export restriction, a production quota in the exporting country lowers the supply in international markets and increases the world price, thus shifting the rent from the importing to the exporting country.⁵⁰

The cross-border impact created by the rent-shifting effects of consumer taxes and production quotas gives rise to a Prisoners' Dilemma situation, similar to the one discussed earlier. If each country acts non-cooperatively, it will have an incentive to set its policy at an inefficient level in order to shift the resource rent away from its trading partner. For instance, while consumer taxes on oil could be efficiently set at a positive rate to offset the environmental damage created by carbon dioxide emissions, importing countries may have an incentive to go beyond the efficient tax rate. A similar argument may apply to producing countries, which may restrict production (and hence export) of oil for both beggar-thy-neighbour and resource conservation purposes. Collier and Venables (2009) argue that attempts to shift rents internationally in tariff or export tax wars are zero-sum games, whereby one trading partner's gain or loss is balanced by the losses or gains of the other trading partner. They show that these policy interventions create substantial price variation across different national markets, which creates inefficiency. For example, high prices in importing countries may reduce consumption to a greater degree than is necessary to meet environmental concerns. Also, the lessons that we learn from the theory of trade agreements apply to this environment. It would in

principle be possible to reach a mutually beneficial deal between importing and exporting countries in which production restrictions and consumption taxes would be reduced, so as to cut efficiency losses while the international distribution of rents is unaffected.

Clearly, a reduction of production restrictions in the oil sector may stop short of a complete elimination of restrictions. Production may need to be restricted on account of the efficient management of an exhaustible resource or the adverse effects of carbon dioxide emissions.

(ii) Export licensing

A discussion related to that on export taxes has taken place in the framework of the Doha Round negotiations, where four WTO members recently circulated a proposal for a protocol on transparency in export licensing.⁵¹ This proposal reflects a concern about the use of quantitative export restrictions on natural resources which was first expressed by one of the four proponents in a paper circulated in 2006.⁵²

The 2006 paper discussed the need for enhanced disciplines on export restrictions, arguing that the provisions that regulate the use of quantitative restrictions on imports and on exports in the GATT/WTO framework are unbalanced. Existing provisions regarding export restrictions are often less explicit and less precise than those for import restrictions. The paper therefore proposed disciplines to enhance the transparency of export restrictions, in particular when applied to mineral products and other exhaustible natural resources. Based on this paper, a proposal for negotiations on Enhanced Transparency on Export Restrictions was subsequently submitted, including a draft agreement on export licensing procedures. This proposal was further revised and evolved into the proposed protocol, which would not be limited to natural resources.

(b) Subsidies

A number of issues relating to subsidies in natural resource industries have been debated in WTO accession negotiations and/or are being discussed in the Doha Round negotiations. Before examining these specific issues, let us consider what economic theory tells us about the rationale for subsidy disciplines in trade agreements.

As explained in Box 28, there are two main explanations for the role of trade agreements in economics literature: the commitment approach and the terms-of-trade approach. According to the former, WTO subsidy rules may provide policy-makers with a commitment mechanism to credibly eliminate or limit an inefficient policy. Brou and Ruta (2009) and Brou, Campanella and Ruta (2010) demonstrate this point in the context of domestic subsidies, but the logic of the argument applies also to export subsidies.

In the terms-of-trade approach, the case for imposing disciplines on the use of subsidies is more limited (Bagwell and Staiger, 2006b; Bagwell and Staiger, 2001b; Janow and Staiger, 2003). The fundamental inefficiency associated with unilateral trade policy choices is insufficient trade volumes and, to the extent that a subsidy increases trade volumes, it enhances efficiency. Consequently, restricting its use would work against efficiency.⁵³ However, when subsidy rules prevent the use of new subsidies that have the effect of undermining negotiated tariff commitments, they help governments negotiate more efficient market access agreements and thereby enhance efficiency.

A related issue is the role of domestic subsidies as an efficient (i.e. first-best) policy tool in addressing market failures (Bhagwati and Ramaswami, 1963; Johnson, 1965). This argument suggests that the design of subsidy rules within a trade agreement should leave sufficient policy flexibility to member governments to address distortions. Failing to do so might induce policy-makers to over-use other – less efficient – measures, such as tariffs, as substitutes to domestic subsidies (Sykes, 2005).

(i) Subsidies to fisheries

A well-documented example of subsidization of a natural resources sector is the fisheries industry. Many commentators consider that fishing subsidies exacerbate the problem of exhaustibility by encouraging over-exploitation. In this context, one question that has been raised is whether the Agreement on Subsidies and Countervailing Measures (SCM) in its current form adequately disciplines such subsidies. As noted in Section C, one might expect the supply schedule for fish to bend backwards above a certain price level because of over-exploitation and falling productivity in a situation of poorly defined property rights. This means that above this threshold price level, a subsidy might reduce rather than increase the amount of fish harvested. Under such circumstances, neither importers of subsidized fish nor exporters to the subsidizing country would appear to have grounds for complaint to the WTO.

A second issue is that a fishing subsidy is unlikely to be challenged as an export subsidy under the SCM Agreement because fishing subsidies are usually granted by net importers of fish for domestic consumption (Young, 2009). Fishing subsidies are more likely to be deemed to be actionable subsidies. In this case, for a WTO member to challenge successfully the subsidy at the WTO, it would be necessary to show adverse effects to the member's interests. According to a number of commentators, this is a difficult task (Young, 2009). There are a number of reasons for this. First, the disparate nature of fish species makes market displacement harder to prove. Second, distortions will be in resource availability rather than in the prices for exporters (which does not give grounds for a challenge under the SCM Agreement). Third, it is difficult to identify a price reference point against which the loss

can be measured because the entire industry is distorted through subsidization (Submission from New Zealand, 2002).

A final issue that, allegedly, makes it difficult to enforce the SCM Agreement in relation to fisheries subsidies is the failure of WTO members to report adequately their use of fishing subsidies. Consequently, there is a lack of meaningful data on such subsidies available to other members (Submission from Australia, Chile, Ecuador, Iceland, New Zealand, Peru, Philippines and the United States, 2002).

For these reasons, concerted efforts have been made in the Doha Round to negotiate a set of rules that would deal specifically with fishing subsidies. The Declaration adopted at the WTO Ministerial Conference held in Hong Kong, China in 2005, noted the “broad” agreement of WTO members on the need to “strengthen disciplines on subsidies in the fisheries sector, including through the prohibition of certain forms of fisheries subsidies that contribute to overcapacity and over-fishing” and called on members “promptly to undertake further detailed work to, *inter alia*, establish the nature and extent of those disciplines, including transparency and enforceability”.

The economics of subsidies sheds some light on the effect of such measures in the fisheries sector. If the sector suffers from an open access problem that causes over-fishing, a subsidy that stimulates production (such as a production or an export subsidy) will worsen over-fishing and, possibly, reduce social welfare (see Section D). So, why would policy-makers introduce such policy measures? And what can WTO rules do about it? Economists see two main reasons why governments may want to use subsidies in the presence of an open access problem – political economy motivations (i.e. pressures from the import or export-competing sector), and, in the case of subsidies to import-competing industries, terms-of-trade manipulation (i.e. the desire to alter world prices to obtain a terms-of-trade gain).

Consider the political economy argument first. Suppose fisheries are contained within a single Exclusive Economic Zone (EEZ), which gives the country certain exclusive rights. In the absence of other market failures, a fisheries subsidy redistributes income within the country from taxpayers to fishermen, and lowers social welfare through the over-exploitation of the country’s resource. A politically organized sector gains at the expense of the rest of society (including current and future generations). In this situation, WTO rules disciplining fisheries subsidies would provide policy-makers with a commitment mechanism to credibly eliminate an inefficient policy, much in the spirit of the commitment role of trade agreements discussed in Box 28.

A subsidy to fisheries aimed at manipulating the country’s terms of trade might seem attractive when tariffs are constrained by commitments. If fisheries are contained within a single EEZ, the only impact that subsidies would have on other countries would be a terms-of-trade effect. Indeed, a subsidy to import-

competing domestic fisheries would reduce imports. If the subsidizing country is large enough, this constitutes a beggar-thy-neighbour policy (i.e. imposes a negative terms-of-trade effect on trading partners). Unilateral attempts to manipulate terms of trade through subsidies will lead to a “Prisoners’ Dilemma” situation (see Box 28), exactly as in the case of a tariff war.⁵⁴ An agreement allowing signatories reciprocally to commit to the reduction/elimination of fisheries subsidies would eliminate all terms-of-trade effects and would improve global social welfare.

It should be noted, however, that in both cases discussed above, over-fishing would be mitigated, but not eliminated. As discussed in Section D, there would still be a need to address the open access problem through appropriate allocation of property rights and domestic regulation within each country. Finally, in the presence of global commons (i.e. with fugitive or highly migratory fish stocks), subsidies induce two types of effects – a typical terms-of-trade manipulation externality and an externality related to the over-exploitation of a global resource. A trade agreement would address only the terms-of-trade effect. There would still be a need for another agreement to address the global open access problem because countries would not have an incentive to control their harvests if other countries did not simultaneously control theirs.

Economics distinguishes “bad” subsidies (those discussed above that distort trade and worsen open access problems) from “good” subsidies. The latter are those that aim at addressing a market failure. Efficient subsidy rules need, therefore, to strike the right balance and provide some form of flexibility (see Brou, Campanella and Ruta (2010) for the general case). For example, an economic case can be made for a distinction between subsidies that contribute to over-fishing and subsidies that help governments manage fisheries and reduce fishing capacity (see Section D). This point is made by Copeland and Taylor (2009), who discuss the importance of monitoring for appropriate resource management. In their view, what matters for addressing the open access problem are effective property rights rather than formal property rights. This suggests that “good” subsidies, such as those needed to establish monitoring capacity, would need to be excluded from any reduction or elimination commitments.

The negotiations on fisheries subsidies in the context of the Doha Round have made progress even if a number of issues remain highly controversial (Bilsky, 2009). In November 2007, the Chair of the Negotiating Group on Rules issued a negotiating text including proposed amendments to the SCM Agreement that would establish new disciplines on fisheries subsidies.⁵⁵ The Chair’s negotiating text lists a number of specific fisheries subsidies that would be prohibited as they are most likely to lead to harmful excess capacity or fishing effort.⁵⁶ The text also includes a list of subsidies that would not be prohibited. Subject to certain conditions, all WTO members would, for instance, be able to administer subsidies for natural disaster relief, for the adoption of techniques to reduce the environmental

impact of fishing, for improved compliance with fisheries management regimes, and for vessel decommissioning.

The Chair's text also responds to the demand for special and differential treatment for developing countries. Least-developed countries would be allowed to administer any type of subsidy. As for developing countries generally, they would be allowed to administer subsidies for infrastructure, income support and price support. They would also be allowed to administer any subsidy to subsistence fisheries while subsidies to the most industrial fisheries would be subject to certain conditions. In addition to the list of prohibited subsidies and exceptions, the Chair's text also contains general, across-the-board disciplines on subsidies that are shown to have adverse effects on fugitive or highly migratory fish stocks or on other stocks in which another WTO member has an identifiable fishing interest.

The Chair's text was extensively discussed. Participants' views, however, continued to differ and the discussions did not generate the necessary elements that would have allowed the Chair to propose a revision of his text that could lead to greater convergence. Instead, the Chair decided to circulate a roadmap for discussions on fisheries. The roadmap raises a series of questions, all of which are aimed at clarifying participants' positions on different aspects of the mandate.

(ii) Fisheries access agreements

Several WTO members have submitted proposals to the Negotiating Group on Rules that address access arrangements. These arrangements generally involve government-to-government payments in return for foreign access to developing countries' EEZs. Such access arrangements constitute significant sources of income for some developing countries which have proposed excluding them from the scope of any fisheries subsidy disciplines. At the same time, fisheries access arrangements now represent the main source of supply for fish species such as tuna, some demersal fish, and molluscs to the EU and Japan, which are major Distant Waters Fishing Nations (DWFNs). According to Orellana (2007), the terms of the arrangements often leave the host country with only a fraction of the actual resource value, and more than a few access arrangements have led to the depletion of host country stocks.

One question that has arisen is whether the transfer of access rights acquired by the DWFN through these access arrangements to its distant water fleet represents a subsidy. The answer to this question depends on whether the DWFN receives sufficient payment in exchange for the right to fish that it provides to its distant-water fishing fleet. The submissions tabled by WTO members typically address access payments. However, they also reflect different views on the role and legal status of access arrangements. Proposals range from the total exemption of access agreements from new disciplines to conditioning the exemption of

access agreements on the non-existence of a subsidy as well as environmental and/or transparency criteria.

The Chair's November 2007 text would provide that government-to-government access payments are not subsidies. Subsidies arising from the further transfer, by a paying member government, of such access rights to its fishermen would in principle be prohibited, except where the access relates to fisheries within the EEZ of a developing country, the access agreement is made public, and it contains provisions designed to prevent over-fishing based on internationally recognized best practices.

(iii) Dual pricing

Another subsidies-related issue that has arisen in the WTO accession negotiations of several members, as well as in disputes and in the Doha Round negotiations on rules, is the "dual pricing" issue. As mentioned previously, dual pricing is a system of differentiated prices in the domestic and the export market, which governments can implement, for instance, through a regulation that sets the maximum price at which a natural resource can be sold on the domestic market. This price is lower than the price prevailing in the export market.

Sub-section 1 discussed how dual pricing raised issues under the Subsidies and Countervailing Measures Agreement, and possibly under Articles XI and XVII of the GATT. In several accession negotiations, for example, there have been discussions on whether dual energy pricing gives domestic exporters in energy-intensive sectors an unfair competitive advantage that would be deemed illegal under the SCM Agreement. In the rules negotiations, one delegation tabled a proposal aimed at clarifying the disciplines on dual pricing in the SCM Agreement.⁵⁷

As argued in Section D, a dual-pricing scheme on natural gas, for example, has an effect similar to an export tax on gas which in turn is equivalent to a subsidy to domestic users of gas. The measure lowers the domestic price of the natural resource relative to its export price. For this reason, it gives a cost advantage to downstream industries (i.e. producers of energy-intensive goods), which leads to higher exports and results – if the country is large enough in international markets – in a reduction of the world price for the products of these industries. The similarities between dual-pricing arrangements and export taxes are worth bearing in mind for purely analytical purposes.

As in the case of export taxes and subsidies, economists argue that a dual-pricing scheme has a beggar-thy-neighbour component when it lowers the world price of resource-intensive products. This may trigger (or be the result of) trade policy measures aiming at restricting imports of such products originating from the country that adopts a dual-price regime (tariff escalation). An agreement that regulates dual-pricing practices in the resource-rich country and tariff escalation by resource importers would be mutually beneficial.

Governments may have a legitimate efficiency reason to offer subsidies where there is some form of market failure. In the case of a dual-price regime, arguably the market failure must involve an inefficient level of consumption of the natural resource, or the existence of an infant industry. While a dual-pricing scheme may be an effective way to provide a subsidy (if a price control can be easily implemented), such a policy measure is not necessarily first-best. Unless the dual-pricing mechanism can be properly fine-tuned, all consumers of the natural resource would benefit from the implicit subsidy provided by the system of dual-price regulation. This could be a problem if only a subset of users is the intended target of the subsidy. In this case, a consumption subsidy that directly addresses the problem may be a more appropriate measure as it avoids the over-consumption of the natural resource in all the other sectors. This is important to keep in mind as, in the light of the commitment approach (see Box 28), the regulation of dual-pricing mechanisms in a trade agreement could be motivated by the need to limit a beggar-thyself policy.

(iv) Fossil fuels subsidies

The leaders of the G20 agreed in September 2009 to phase out inefficient fossil fuel subsidies. Specifically, the Pittsburgh communiqué states that “inefficient fossil fuels subsidies encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change”.⁵⁸ As discussed in section C.4, consumption of fossil fuels has a negative effect on the environment, through the production of CO₂ emissions, that is not fully reflected in market prices. Certain forms of subsidies, such as consumption subsidies, exacerbate this negative environmental externality. An international undertaking to limit the use of an inefficient policy is very much in the spirit of the commitment role of trade agreements discussed in Box 28.

(v) Exception under the SCM Agreement

Another concern that has been raised and that is also linked to the existence of market failures relates to the possibility that WTO rules may prevent governments from pursuing conservation policies. Under Article 8 of the Subsidies and Countervailing Measures Agreement, certain environmental subsidies were deemed to be non-actionable (i.e. not subject to challenge in the WTO or to countervailing measures). However, these provisions expired at the end of 1999 as WTO members did not agree to retain them.⁵⁹ As noted by Marceau (2010b), numerous commentators have called for reinstating such a provision to provide a safe haven for certain environmental subsidies such as those for renewable energy or for climate change mitigation or adaptation. As of now, however, those calls have not been reflected in any proposals or discussions by members in the Doha Round negotiations on WTO rules.

(c) Domestic regulation

What are the challenges for the WTO when market failures in the natural resources sector are purely local – that is, when the “external” effect of an economic transaction (e.g. pollution, depletion of the natural resource) is contained within national borders and, hence, does not cause any welfare loss to citizens in other countries? Economists have identified two main challenges. Some fear that WTO rules will induce countries to impose sub-optimal regulations, which might possibly result in the dissipation of the natural resource. In this scenario, with their hands tied on the trade policy side, governments may be reluctant to adopt efficient regulations which favour foreign producers. Others are concerned that domestic regulations will be used to influence trade flows. They see the possibility that governments may offset the effect of tariff reductions on market access with looser domestic regulations that create a cost advantage for import-competing producers.

Bagwell and Staiger (2001a) show that trade negotiations can affect a government’s incentive to set an efficient regulation in two different ways, each of which raises a distinct challenge. In their model, trade policy may have a negative impact on trading partners through a terms-of-trade effect (see Box 28) and domestic regulations are set to address a local market failure.

As a concrete example, consider the case where both governments need to regulate fishing in an internal lake. In this context, countries affect each other only through their market interactions (i.e. through trade) and no other cross-border external effect arises. This means that countries may care about how their trading partners regulate the open access problem, but only because of the trade effects that such choices could imply. If there are no institutions to facilitate international cooperation, governments would efficiently regulate the open access problem but would have an incentive to set inefficiently high trade restrictions. The reason for this is that the only inefficiency associated with unilateral policy choices derives from the desire to obtain a terms-of-trade gain at the expense of trading partners. As the open access is a purely domestic problem, the government has no incentive to under (or over)-regulate the natural resource sector.

The situation is different when countries negotiate over tariffs, but unilaterally set domestic policies. In this case, once tariffs have been committed in a trade agreement, governments may face an incentive to set an inefficient domestic regulation. Intuitively, trade liberalization may change the optimal level of domestic regulation, but governments now understand that – with their tariff bound (i.e. with a firm commitment to a tariff ceiling) – a change in the regulatory policy may affect the market access granted to trading partners. Two situations can emerge, as explained below.

(i) Natural resources regulation as an obstacle to trade?

If domestic regulations affect market access, trade policy commitments may induce a government to alter its regulatory stance to reduce market access granted to trading partners.⁶⁰ For example, the removal of a restrictive domestic regulation (e.g. the weakening of mining regulations aimed at preserving the environment, an extension of the fishing season in an internal lake) can confer a cost advantage to the import-competing sector over foreign producers, and hence lower the trading partner's access into the domestic market.

Bagwell and Staiger (2001a) show that, from a theoretical point of view, including a "non-violation" clause (such as the one in Article XXIII of GATT) in the trade agreement may address this problem. The ability of a trading partner to bring a complaint to the WTO even if the change in domestic regulation does not violate WTO rules keeps in check the incentive to make the regulation less stringent. This institutional solution allows WTO members to achieve the efficient combination of trade and domestic policies whenever governments have the incentive to use the domestic regulation to undo the market access granted to trading partners through a tariff reduction.

However, as observed by Staiger and Sykes (2009), in practice only three non-violation claims have been successful in the history of the GATT/WTO system and none of those involved domestic regulation. In Staiger and Sykes' view, "the reasoning of both the panel and the Appellate Body in *EC – Asbestos* casts serious doubt on the prospect of successful non-violation claims relating to domestic regulation in the future".

(ii) Trade rules as an obstacle to natural resource conservation?

With trade policy commitments restricting their margin of manoeuvre, policy-makers may face weaker incentives to enact domestic regulations that grant more (and not less) market access to trading partners. Assume, for instance, that the price of a natural resource attracts increased entry into the natural resources sector and exacerbates the open access problem. In this case, the efficient domestic policy would be to restrict access to the resource (for instance, move into a system of stricter harvest quotas), but the government may be reluctant to do so as this policy would increase the market access of the trading partner to the detriment of the import-competing sector.

A second example of this type of situation is the introduction of a norm for an "environmentally-friendly" extraction or harvesting method (i.e. a method that reduces damage to the environment). If the norm implied an increase in production costs for domestic firms, policy-makers are again caught in the dilemma between improving natural resources management and worsening the competitiveness of import-competing producers.

Bagwell and Staiger (2001a) argue that this incentive problem would be solved if trade rules granted the right to governments to choose the mix of domestic and trade policies that stabilizes their market access commitments with trading partners. The additional flexibility provided by this would ensure the adoption of efficient trade and domestic policy, as the government could change domestic regulations without worrying about the resulting market access implications. Following the logic of the examples above, the government could introduce a system of stricter harvest quotas or a norm for clean extraction/harvesting methods and increase its tariff so as to maintain the same level of market access in the resources sector.

As discussed in sub-section E.1, the ability of governments to combine natural resources management and trade measures as suggested above may be limited by the non-discrimination rules (Articles I and III of the GATT). Restricting access to the domestic market for foreign producers employing an environmentally unfriendly process and production methods (PPMs) could be justified on the basis that goods produced with different PPMs are not "like products", but this issue is not settled. However, even if a regulation is, on the face of it, contrary to Articles I or III of the GATT, WTO rules provide some flexibility through GATT Article XX to address conservation and environmental problems associated with natural resources management.

As previously noted, Article XX allows WTO members to impose otherwise inconsistent trade measures if they are related to the conservation of exhaustible natural resources (Article XX(g)) or if they are necessary to protect human, animal or plant life or health (Article XX(b)). Some might argue that since the measure that directly relates to the conservation of the resource is the new regulation, the trade measure may not be covered by Article XX. Others might point to the decision in *Brazil - Retreaded Tyres* which stated that the regulation mix as a whole should be examined rather than the regulation alone.⁶¹

(d) International regulation

While the management of some natural resources in one country may not directly affect the welfare of citizens living in other countries (or, more precisely, only affects them through its trade effects), in many cases domestic regulation – or the lack of it – has spillover effects that cross national borders. Striking examples are poorly defined property rights that lead to the over-exploitation of a natural resource shared by different countries (e.g. fish) or which aggravates global warming (e.g. forests). When international externalities are involved, natural resources are "global commons". It is clearly not possible to reach efficient policy outcomes with international negotiations over trade policy alone. This is because unilateral policy choices create inefficiencies that have nothing to do with those relating to terms-of-trade manipulation. Global commons need

efficient regulation and, because of the spillover effects of national choices, efficiency can only be achieved if such regulation is entrenched in an international agreement.

Water provides an interesting example of possible interactions between international agreements on natural resources and trade agreements. Opening trade in water-intensive products may save water if products are exported by countries with high water productivity to countries with low water productivity. However, trade in "virtual" water may also accelerate depletion of water stocks if the social and environmental costs associated with water use are not accounted for in the price paid by consumers in importing countries (see Box 4).

Trade in agricultural products is of particular relevance, given that 85 per cent of global water consumption occurs in agricultural production and water used in agricultural production is typically under-priced (Hoekstra and Chapagain, 2008a). Economic analysis suggests that the first-best policy is to ensure the correct pricing of water. This could be facilitated by an international treaty on proper water pricing (Hoekstra, 2008b).

Global fisheries constitute another illustration of the problem. Evidence suggests that the vast majority of fisheries are either open access or poorly regulated. Assigning property rights may not be enough to reduce the over-exploitation of the resource: one country does not have the unilateral incentive to control its harvest if other countries do not enact effective controls at the same time. Countries concerned with marine biodiversity and the global impact of the over-exploitation of fisheries may envisage different measures to conserve over-exploited fish species.⁶² One approach is to negotiate multilateral agreements regulating fisheries. The United Nations Fish Stocks Agreement (1995), for instance, provides a framework for the conservation and management of highly migratory and fugitive fish stocks in international waters regulated by regional fisheries management organizations (RFMOs). Nine RFMOs are in existence today.

(i) Problem of "issue linkage"

Two main reasons for linking trade with non-trade international issues have been identified by economists. The first is the "grand bargain" approach, while the second is the "enforcement" argument, as explained below.

According to the first approach, "issue linkage" (i.e. making the agreement on one issue dependent on progress in another issue) can be used as a means of achieving mutually welfare-enhancing cooperation (Abrego et al., 2001; Cesar and de Zewe, 1996). Consider an issue X on which cooperation benefits country A but hurts B and an issue Y on which cooperation benefits country B but hurts A. Linking the two issues may facilitate a global deal. For instance, trade concessions can be granted on condition that

there is cooperation in preventing over-harvesting of a natural resource such as forestry. Therefore, a grand bargain may be more efficient than two separate deals. While this argument has its obvious merits, it should also be noted that agreements may become more difficult as the number of issues on the table and the complexity of the bargain increase.

As observed in Box 28, enforcement problems are a key issue for some international agreements as a supranational authority to punish violators is generally absent. For this reason, some economists have investigated the possibility of linking different issues as a means of enforcing cooperation (Spagnolo, 1999; Limao, 2005). For instance, trade sanctions could reduce the enforcement problem in agreements aimed at preserving natural resources. Critics of the enforcement approach raise the concern that linkage may work against trade opening efforts. For this reason, it is important to understand under what conditions linking different issues may result in greater cooperation, with each policy moving in the desired direction. (Limao, 2005) argues that issue linkage leads to gains in both the trade and the non-trade area when the international externalities are substantial. This would be true, for instance, when managing global commons. In this case, linking trade and natural resource issues would improve cooperation in trade and resource management.

(ii) Problem of coherence

Another issue is consistency among different international agreements. As explained in sub-section 2, the WTO is part of a much broader framework of international cooperation and many aspects of natural resources are regulated by international rules outside the WTO. This raises the challenge of maintaining coherence between these other international rules and the rules of the multilateral trading system. The challenge becomes greater as existing international regimes continue to develop and new regimes are created.

While coordination at the domestic level is crucial to ensure consistency among international agreements, actions at the international level can also help reduce the risk of incoherence.⁶³ Coherence between regimes is sometimes an explicit objective. Good examples of this are the commitments to pursue coherence between trade and environmental measures reflected in the 1994 WTO Decision on Trade and Environment and those in the Rio Declaration on Environment and Development (see sub-section 2). Increased cooperation between international organizations can also help promote coherence. Trade and environment again provides an example. As of April 2009, 25 intergovernmental organizations had observer status in the WTO Committee on Trade and Environment, including the United Nations Environment Programme (UNEP) and several multilateral environmental agreements, such as the United Nations Framework Convention on Climate Change (UNFCCC), CITES and the Convention on Biological Diversity (WT/CTE/INF/6/Rev.5).

There is a cooperation arrangement between the WTO and UNEP Secretariats. The WTO has observer status in the UNEP Governing Council, and the WTO Secretariat regularly attends the main meetings of multilateral environmental agreements which contain trade-related measures. Furthermore, the WTO and UNEP recently produced a joint report on trade and climate change, WTO-UNEP (2009). Existing forms of cooperation and information exchanges between the WTO, UNEP and multilateral environmental agreements are described in detail in WTO document TN/TE/S/2/Rev.2. This was prepared by the WTO Secretariat for the negotiations that ministers agreed to launch in Doha on "procedures for regular information exchange between MEA Secretariats and the relevant WTO committees, and the criteria for the granting of observer status".⁶⁴

The decentralized nature of the international system and the co-existence of many international regimes means that these sometimes overlap. Few today consider that the WTO is a closed regime impermeable to other international rules, although there is debate about the extent of its permeability and the mechanisms of transmission. WTO adjudicators have looked at other international agreements for guidance when interpreting provisions of the WTO agreements, but whether other international rules might prevail over WTO rights and obligations in some circumstances remains a contested issue.

WTO members can jointly waive their obligations under the WTO agreements if there is the potential for conflict with measures taken under another international arrangement, as they did in relation to the Kimberley process, as described above. The UN International Law Commission has also described various tools that are available in international law to resolve instances of potential conflict. Some WTO members, however, see a need to clarify the relationship between the WTO and certain other international regimes. As a consequence, at the 2001 Doha Ministerial Conference, WTO members agreed to negotiate on the relationship between WTO rules and multilateral environmental agreements, particularly those that contain "specific trade obligations". Members have agreed that the scope of these negotiations would be limited to the applicability of WTO rules to members that have signed the multilateral environmental agreement under consideration.

(e) Investments: The "hold-up" problem

Trade policy in natural resource sectors is not just about the market for the resource itself, but is also about the market for the licences to explore and extract the resource that are granted by the governments of resource-rich countries to international investors. These contracts imply a long-run relationship as exploration and extraction generally entail large initial sunk costs (see subsection B.3). Also, the contracts often specify aspects of the fiscal regime that determine the distribution of rent between parties and shape

incentives for future exploration and development. The design of these contractual arrangements is complex because they have to meet multiple objectives. The situation is further complicated by the volatility of these sectors and uncertainty about such matters as geology and technological developments as well as by the varying levels of information available to different parties to a contract.

The host government is not only concerned with the expected value of the rent, but also with the wider benefits that the resource exploitation brings to the economy. Moreover, where the resource revenue dominates the economy, actions in this sector are central to the development strategy of the country (see Section C.4). International investors, on the other hand, may be concerned that the large upfront capital costs have little or no alternative-use value and can take years to be recovered.

This type of contractual situation leaves parties open to what economists call a "hold-up" problem (i.e. a situation where the contractual agreement between two parties is affected by concerns that one party will gain undue bargaining power once investment by the other party has been committed). Specifically, hold-up is a credibility problem that emerges in investment relationships such as the one described above. The government has difficulty in committing credibly not to renegotiate the terms of the contract. It might see a need to change policies, such as the tax regime, that would affect the profits of the investing company. Anticipating this, investors are deterred by the risk of renegotiation.

The hold-up problem has three main effects: host governments may receive a lower initial payment, contract firms are likely to invest less than the efficient level, and the extraction rate may be faster than the optimum as firms try to recoup the initial investment more quickly. The hold-up problem may partly explain the under-exploration, and possibly the unsustainable extraction, of oil, gas and minerals in some regions of the world.

The fundamental issue is one of time inconsistency faced by the government of the resource-rich economy about the course of its future actions. This creates a market failure, the cost of which is predominantly borne by the host country, as international investors anticipate the problem and, hence, discount the cost of this failure (e.g. by investing less). Therefore, if the host government could lock in the course of its future actions in an appropriate institutional mechanism, this would mostly benefit the resource-rich economy.

As the source of the problem is the unlimited sovereignty of the host country, it should not come as a surprise that the solution to the credibility problem calls for constraints on governments' behaviour. Very much in the spirit of the commitment approach to trade agreements discussed in Box 28, host country governments often agree in the context of bilateral investment treaties (BITs) to limit their scope of action and to face consequences if they modify the conditions

of an agreement. In recent years, BITs have become the dominant international mechanism through which investments are protected (see sub-section E.2).

BITs are generally perceived to be efficiency-enhancing, but two sources of criticism have emerged in the relevant literature. First, differences in power are more pronounced in a bilateral than in a multilateral system. Hence, even where developing countries are able to make credible promises to potential foreign investors, their overall gains may be relatively modest (Guzman, 1998). Second, if the arbitration mechanisms provided in the agreements are not effective, the hold-up problem will only be partially resolved (Collier and Venables, 2008).

Some authors have proposed using the WTO and its enforcement mechanism to enable governments to commit themselves to resource extraction and investment agreements in natural resource sectors (Collier and Venables, 2008). Quite apart from the fundamental question as to whether WTO members would view such an idea favourably, there are two important limitations to such a proposal. First, the WTO dispute settlement system is only open to WTO members and private parties cannot initiate a dispute. The second concerns the remedy. The WTO dispute settlement system only provides for prospective relief and does not provide an opportunity to obtain compensation for any damages. By contrast, foreign investors can obtain monetary reparation for damages suffered in international investment arbitration, which can include lost profits (Dolzer and Schreuer, 2008).

As noted earlier, the WTO Working Group on Trade and Investment was established in 1996. Discussions on trade and investment were initially part of the mandate of the Doha Round but in 2004, WTO members decided to exclude trade and investment from the negotiations.⁶⁵

(f) Competition

For reasons discussed in Section C, production and/or export of natural resources are often concentrated among a small number of firms and imperfect competition often prevails in those markets. The economic analysis in Section C also identified a number of effects of imperfect competition on trade in natural resources. First, it was shown that a monopolist or a resource cartel may lead to inefficient (i.e. slower than optimal) extraction path of non-renewable natural resources.⁶⁶ In the situation of an export monopoly or cartel, this implies an inefficient path of trade volumes. A second problem discussed in Section C is that through the allocation of export or production quotas, resource cartels may determine trade patterns in a way that is unrelated to comparative advantage. A third problem, only briefly touched upon in Section B.3, is that vertically integrated firms (or cartels) may undermine market access for foreign suppliers.

Governments may face different incentives and adopt different attitudes with regard to imperfect competition

in natural resource sectors. In some cases, governments of resource-rich countries are closely involved in collusive export arrangements. In other cases, they may simply allow collusive practices among exporters as long as they do not affect domestic markets. The governments of exporting countries, for example, may have little incentive to impose disciplines on exporting firms exercising their market power in foreign markets. This is because monopoly rents accrue to the home country while consumer loss due to high prices is mostly felt in the foreign (importing) countries. As for the governments of resource-importing countries, they may respond to collusive or monopolistic practices either by using trade policy, as discussed in Section D, or when export cartels involve private firms, by prosecuting collusive behaviour.⁶⁷

From the perspective of trade cooperation and regulation, certain government behaviour *vis-à-vis* collusive practices may have cross-border externalities. This would be the case, for example, when the governments of exporting countries fail to impose disciplines on exporting firms exercising their market power in foreign markets. As already mentioned, this may well lead foreign governments to use trade policy in an attempt to shift rents internationally and, therefore, constitutes a welfare-reducing non-cooperative situation. This would be an argument in favour of negotiating disciplines on competition, possibly in exchange for tariff concessions. Note, however, that a second-best argument can be made that slower extraction may offset negative environmental impact. Moreover, in some cases monopolies in these sectors may result from natural monopoly conditions rather than a lack of competition. As with investment, WTO members decided in 2004 to exclude negotiations on competition from the Doha Round negotiations.

(g) Transit and transportation

In recent years, a number of issues relating to the transit of natural resources – in particular gas – have been discussed in the WTO. Article V of the GATT requires WTO members to ensure freedom of transit through their territory. Freedom of transit ensures that third countries do not impede trade and allows exporters to minimize transport costs. However, as explained in sub-section E.1, views differ regarding the scope of Article V. One issue that has been discussed is whether Article V applies only to “moving” modes of transport or also to transport via fixed infrastructures, such as pipelines. Should the former view prevail, this would mean that freedom of transit would not be guaranteed for natural resources being transported by pipeline.

The importance of transit rules for trade in energy goods, in particular oil and gas, has contributed to raise the profile of GATT Article V in the WTO. The Doha Round negotiations on trade facilitation provide an opportunity to clarify and strengthen the disciplines contained in this provision. It has been proposed that Article V should be made to apply explicitly to fixed infrastructure (such as pipelines and grids). This would

ensure that enterprises with special privileges comply with transit disciplines. It has also been suggested that a general national treatment obligation be established for goods in transit (Cossy, 2009). Other proposals relate to disciplines on fees and charges, formalities and documentation requirements, and regional transit agreements (Marceau, 2010b). The scope of Article V has also been discussed in WTO accession negotiations. As a result, several WTO members which recently acceded to the WTO have confirmed a commitment in their Accession Protocol to comply with WTO obligations on transit and, in one instance, a specific reference has been made to energy.

The General Agreement on Trade in Services (GATS) covers energy transportation services, including: i) services incidental to energy distribution, which includes transmission and distribution services on a fee or contract basis of electricity, gaseous fuels and steam and hot water; and ii) transportation via pipeline of crude or refined petroleum and petroleum products and of natural gas. While all WTO members must grant most-favoured-nation treatment to services and service suppliers operating in these two sectors, few have undertaken GATS specific commitments. Only 18 members' schedules record commitments on services incidental to energy distribution and 12 on pipeline transportation. These commitments have been undertaken mainly by countries which have acceded to the WTO over the last ten years.

Energy transportation services are on the sidelines of the services market access negotiations in the Doha Round, presumably because they remain a sensitive topic for most WTO members. The reluctance to undertake GATS commitments in these two sectors contrasts with the interest expressed by various members in negotiating commitments on other energy-related services, in particular exploration, mining, engineering and consulting.

GATS specific commitments contribute to predictability and stability for foreign service supplies and suppliers regarding conditions of access to markets. However, with respect to energy transportation networks, they may not be sufficient to guarantee effective conditions for competition and access. The energy sector has traditionally been characterized by large vertically integrated state-owned monopolies which manage transmission and distribution networks. Pipelines in particular entail high fixed costs and long lead times, which makes their duplication uneconomical. They are thus often in the hands of a monopoly provider, whether public or private.⁶⁸ This in turn creates a high barrier to entry for potential participants.

GATS Article VIII imposes some disciplines on monopolies and exclusive suppliers, but these are insufficient to ensure fair and equitable access to energy networks. This is the reason why some WTO members proposed additional disciplines for energy services modelled on the Reference Paper for telecommunication services.⁶⁹ Such new disciplines could include provisions such as non-discriminatory

third-party access⁷⁰ to, and interconnection with, networks, grids and other essential infrastructure, the establishment of a regulator independent of any supplier, and requirements preventing certain anti-competitive practices for energy services in general.

It may be noted that a reference paper is not a prerequisite for undertaking additional commitments under Article XVIII of the GATS. One WTO member, Ukraine, has already undertaken an additional commitment regarding pipeline transportation services. In its GATS schedule, Ukraine "commits itself to provide full transparency in the formulation, adoption and application of measures affecting access to and trade in services of pipeline transportation. Ukraine undertakes to ensure adherence to the principles of non-discriminatory treatment in access to and use of pipeline networks under its jurisdiction, within the technical capacities of these networks, with regard to the origin, destination or ownership of the product transported, without imposing any unjustified delays, restrictions or charges, as well as without discriminatory pricing based on the differences in origin, destination or ownership."⁷¹

(h) Drawing the line between goods and services

Trade in goods and trade in services are subject to different disciplines in the WTO, and determining that an activity amounts to the supply of a service is a prerequisite for the application of the GATS. This distinction is not always easy to make with respect to activities surrounding the exploitation and processing of natural resources.

It is acknowledged in the WTO that the production of goods on a company's own account – that is, performed by a company which owns the raw material it processes – is not a service covered by the GATS. The question is less clear with respect to production on a fee or contract basis, when a company produces goods owned by others. This issue arises in the manufacturing sector (textiles, automotive industry, for example), where processing or assembling material owned by others is common. It might also be relevant to certain natural resource processing activities, such as oil refining, should one consider that these activities amount to the production of a good (see next paragraph). The question whether production on a fee or contract basis should be treated as a service, and thus fall under the GATS, was discussed inconclusively by WTO members several years ago.

This leads us to the related question of distinguishing between production as such and services related to production. As noted above, the GATS covers a series of services related to the exploitation and processing of natural resources, such as services incidental to the following sectors: forestry, fishing, mining and manufacturing. These activities do not represent the production process as a whole, but they are an integral and essential part of it. They fall under the GATS when they are performed on a fee or contract basis.

In certain situations, however, it may be difficult to draw the line between production and activities related to production, especially when the production process consists of a chain of inter-related activities. Consider the two following examples taken from the energy sector. WTO members view drilling, which is an important contribution to the extraction of petroleum, as a “service incidental to mining”. Thus, drilling is classified as a service if performed on a fee or contract basis by a separate entity, but constitutes value added to the extracted good if it is performed by the entity which owns the raw material (the oil). There are diverging views among WTO members regarding activities such as oil refining, gas liquefaction and re-gasification. While some view them as services, others consider that they amount to the production of a good because they entail a certain transformation of the product.⁷²

In practice, it may not always be easy to categorize a given activity as a service or as the production of a good. The GATS offers no guidance on this issue because it does not define a service. The categorization of a given activity as a service or the production of a good can clearly have important consequences regarding WTO disciplines. For instance, should oil refining be considered a service, it would benefit from basic investment protection under the GATS through mode 3. If, on the other hand, oil refining is considered as the production of a good, it falls under Annex IA of the WTO Agreement, which does not protect investment *per se*.⁷³

(i) Intellectual property rights and natural resources conservation

Section C emphasized that technology can have an ambiguous effect on natural resources conservation. Innovation can lead to resource-saving inventions, facilitate the discovery of alternative resources and introduce new technologies that reduce negative environmental externalities. Such innovations can be classified as resource-friendly, as they play a positive role in preventing the exhaustion of the resource stock or mitigating possible negative effects associated with trade in natural resources. However, in other situations, technological innovations can represent a curse for resource conservation. This is clearly the case when inventions increase the harvesting capacity of an over-exploited resource.

The development and diffusion of resource-friendly technologies is one of the issues addressed in the debate regarding the efficient protection of intellectual property rights (IPRs). Strong IPRs encourage research and development (R&D) activities, enabling companies to recoup their investments through the protection of the rights of use of their inventions. However, through the protection they afford the innovating companies, they may restrict access to key technologies for resource-rich developing countries, as IPRs may raise the cost of adoption and diffusion of resource-friendly technologies.

The efficient design of international rules on the protection of intellectual property rights should strike a balance between the need to encourage invention and innovation and the need to disseminate useful technologies as broadly as possible.⁷⁴ Note that strong IPRs do not necessarily limit technological diffusion. Acemoglu and Zilibotti (2001) show that a weak IPR regime prevents technological diffusion around the world as ill-defined IPRs in developing countries encourage firms in advanced economies to target the needs of their own markets, producing technologies inappropriate for developing countries.⁷⁵

Two examples may clarify how access to resource-friendly technologies by resource-rich developing countries may be important for conservation purposes. Section C.3 extensively discusses the open access problem in renewable natural resources, such as fish and forestry, and the negative welfare effects that trade openness may have in the presence of this market failure. One important lesson that emerges from that discussion is on the role of *de facto* property rights on the natural resource. Recent work by Copeland and Taylor (2009) finds that the introduction of formal property rights may not be sufficient in addressing open access problems when governments lack adequate monitoring capacity. The reason is precisely that, in this case, *de facto* property rights on the natural resource are weak because detecting potential property right violations is difficult (and, hence, formal property rights are of little value). The diffusion of satellite technologies may facilitate the monitoring of forests, thus limiting the opportunities for fraud and illegal logging, which would reinforce an effective property rights regime.

A second example which has emerged in recent studies, such as in Brock, Kinzig and Perrings (2007), is the problem of invasive plant species that leads to international trade creating a negative environmental externality. In this case, scientific innovations such as “bar coding” of DNA plant species (a method for plant identification) might eventually pave the way to a plant “scanner” that could be used by customs officers to easily identify potentially invasive species. While the grant and enforcement of intellectual property rights creates a legal environment that contributes to these technological breakthroughs, the international diffusion of these technologies represents an important element in reconciling international trade and the proper conservation of natural resources.

The essential objective of the grant and enforcement of intellectual property rights, as set out in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), is both to promote necessary innovation and facilitate the diffusion of technology, balancing legitimate interests in a socially beneficial manner. Article 7 of the TRIPS Agreement states that intellectual property protection should “contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations”. While the

TRIPS Agreement sets out general standards for the protection of intellectual property under national laws, achieving this “balance” in practice is a matter for domestic policy-makers and legislators.

4. Conclusions

This section of the Report has focused on various aspects of international cooperation to manage trade in natural resources. Much but not all of the emphasis has been on the WTO's role in this area. Some space has also been devoted to a discussion of other international agreements and initiatives relating to natural resources.

The WTO's legal and institutional framework has contributed to the expansion of global trade in natural resources. The relevance of WTO rules has been discussed in considerable detail, focusing on a number of distinctive features that have been used as themes throughout the report. These are the uneven geographical distribution of natural resources, their exhaustibility, the environmental externalities associated with their use, their dominance within national economies, and the volatility of markets for these products.

An important conclusion regarding the reach of the rules is that the WTO generally does not regulate natural resources before they are extracted or harvested. However, in certain instances the rules may have implications for an unextracted or unharvested natural resource. Standing timber provided by a government for less than adequate remuneration was considered a subsidy under the Agreement on Subsidies and Countervailing Measures. Moreover, the exploration, extraction and distribution of natural resources may involve services activities that fall within the ambit of the General Agreement on Trade in Services (GATS). The Agreement on Trade-Related Aspects of Intellectual Property Rights provides a legal basis to promote innovation and the transfer of technology, both of which are particularly relevant to natural resources as new technologies open frontiers for exploration and promote more efficient use of natural resources.

WTO rules were not drafted specifically to regulate international trade in natural resources. This has arguably led in some cases to regulatory gaps, or at the very least to a lack of clarity about the precise applicability of the rules in the particular circumstances that characterize natural resources trade. This section has highlighted a number of these challenges.

One challenge is to manage the regulatory failures implicit in beggar-thy-neighbour policies. A key economic rationale of WTO rules is to induce governments to take into account the negative effects that their unilateral actions may have on trading partners, as uncooperative behaviour leads to a welfare loss from the point of view of world welfare. Taxes and quantitative restrictions on trade can have beggar-thy-neighbour characteristics. An agreement among WTO members to make binding commitments on export

taxes could be mutually beneficial, although from the perspective of individual governments this may depend on why they are using such measures. As with all trade negotiations, trade-offs would be possible on a wider canvas, and not only among members that apply such measures. Even within the confines of trade taxes, a potential trade-off would be export taxes on natural resources against import tariffs on higher value-added products, where these are effectively offsetting because of tariff escalation in manufacturing processes.

Another challenge arises from the need to ensure the sustainability of natural resources. This may require an expansion of some of the flexibilities provided under the current rules. For instance, certain subsidies can secure better management of a resource or of environmental externalities associated with its extraction and use. Other areas where existing WTO rules interact with conservation policies include domestic regulations and the design and implementation of intellectual property rights.

A further issue identified in the study arises when certain domestic and trade measures are subject to different disciplines, even though they have the same economic impact. Given the geographical concentration of natural resources – and hence the fact that resource-scarce countries depend on imports for much of their supply of natural resources and resource-rich countries export nearly all their production – cases arise where trade measures are close substitutes for domestic regulatory measures. In these cases, regulating the trade measure is a necessary but insufficient condition to achieve undistorted trade in natural resources. For instance, a consumption tax in an importing country may be equivalent to an import tariff. A production restriction in a resource-rich country may have the equivalent effect to an export restriction. Similarly, an export tax has effects comparable to a domestic subsidy in terms of the consumption of the resource. In the presence of such equivalence, there is no economic basis for regulating these policies differently.

Improving the regulation of beggar-thy-self policies is another challenge. A measure might be beneficial in the short-run, possibly for political economy reasons, but carry significant long-run costs. This would be the case, for example, with a subsidy provided in connection with the exploitation of a resource that has an open access problem. Another example is that in the absence of international rules on investment, resource-rich countries may be exposed to the “hold-up” problem. Improved investment disciplines could help these countries improve the credibility of their policies towards investments as they underwrite a commitment to agreed-upon rules.

Although trade in most of the natural resources covered by this report face limited trade barriers, trade flows in some sectors still face some obstacles. Freedom of transit may be a case in point. A narrow understanding of WTO obligations in this area could exclude from their scope transport via fixed infrastructure, such as pipelines, and create regulatory uncertainty. This uncertainty can have consequences for access to

supplies of resources. Accession to the WTO of several suppliers of traditional energy products – currently under negotiation – will reduce uncertainty by providing a regulatory framework for a significant share of natural resources trade.

Finally, two main issues have been discussed in relation to the clarity and coherence of arrangements for international cooperation. The first of these relates to the border or overlap between different agreements within the WTO system. With respect to activities surrounding the exploitation and processing of natural

resources it is not always clear whether the GATT or the GATS is applicable. The lack of clarity reduces certainty. The second issue concerns the relationship between the WTO and other international agreements. Many aspects of natural resources are regulated by international rules outside the WTO. A continuing and growing reliance on natural resources in the world economy, the exhaustibility of those resources, and the need to mitigate the negative externalities relating to their exploitation and consumption are challenges that can only be effectively confronted through international cooperation and better global governance.

Endnotes

- 1 Note that before the Second World War, primary commodities consisted mainly of agricultural products and problems relating to commodity price declines and volatility affected both developed and developing countries (many of them still colonies). At that time, there was no specific developing-country problem.
- 2 During the Uruguay Round negotiations, attempts were made by some participants to tighten multilateral rules to deal with certain policies relating to petroleum and petroleum products. These initiatives were taken largely in the context of the Negotiating Group on Natural Resource-Based Products (Stewart, 1993).
- 3 Article XXVIII of the GATT provides a mechanism for a WTO member to modify its schedule of commitments and raise a tariff above the bound level. Such member may be required to offer compensation to other members. Article XIX of the GATT and the Agreement on Safeguards provide a mechanism to raise tariffs temporarily where an increase in imports causes or threatens to cause serious injury to a domestic industry.
- 4 See the Understanding on the Interpretation of Article II:1(b) of the GATT 1994. This prohibition excludes changes equivalent to an internal tax, anti-dumping and countervailing duties, and customs fees commensurate with the cost of services rendered.
- 5 Another exception, in Article XI:2(c) of GATT, allows the application of import restrictions on any agricultural or fisheries product necessary to enforce governmental measures which operate, *inter alia*, to restrict quantities of the "like" domestic product that may be marketed, or to remove temporary surpluses of the like domestic products. Agricultural products are now subject to the disciplines of the Agreement on Agriculture. Fish and fish products are excluded from the Agreement on Agriculture and thus this provision may be of continued relevance for such products.
- 6 This obligation does not extend to more favourable treatment that is granted under a free trade area or customs union that is consistent with Article XXIV of the GATT, or under a preferential trade arrangement adopted pursuant to the Enabling Clause.
- 7 See G/STR/N/3/BRA and G/STR/N/7/VEN.
- 8 Article XX (i) is discussed below in the context of the problem of volatility.
- 9 This language came from the 1987 Panel Report in *Herring and Salmon*. Although the Appellate Body proceeded in its analysis on the basis of this interpretation, it cautioned that the phrase "is not itself treaty language and was not designed as a simple litmus test for inclusion or exclusion from Article XX(g)" (Appellate Body Report, US – Gasoline, pp. 18-19).
- 10 GATT, 3d Supp. BISD 230 (1955).
- 11 Decision of 20 February 1970, L/3361, 17S/18.
- 12 Passage cited from EPCT/A/PV/30 p. 22; report at EPCT/W/245.
- 13 *Decision on Trade in Services and the Environment*, adopted by the Council for Trade in Services on 1 March 1995, S/L/4.
- 14 *Report (1996) of the Committee on Trade and Environment*, WT/CTE/1, paras 153-158 and 210-211.
- 15 See also *Trade and Environment at the WTO* (2004), WTO.
- 16 It seems that the local short supply exception was also rarely used under the GATT. When the need for sub-paragraph (j) was reviewed at the Sixteenth Session in 1960, the Contracting Parties noted "that the contracting parties have resorted to the provisions of this sub-paragraph in a relatively limited number of cases..." (See *GATT Analytical Index*, p. 594).
- 17 Briefing Notes, Hong Kong, China WTO Ministerial 2005, available at http://www.wto.org/english/thewto_e/min05_e/brief_e/brief00_e.htm.
- 18 This approach was first articulated by the 1970 Working Party on Border Tax Adjustments. A number of Appellate Body and panel reports have also followed this approach: see, for example, Appellate Body Report, *Japan – Alcoholic Beverages*, 113 and footnote 46.
- 19 For a useful discussion of Article XX(b), (d) and (g) of the GATT, see Note by WTO Secretariat, GATT Dispute Settlement Practice relating to GATT Article XX(b), (d) and (g) (WT/CTE/W/203) (available at <http://docs.wto.org/DDFDocuments/t/wt/cte/w203.doc>).
- 20 See GATT Panel Report, *Thailand – Cigarettes*, para. 73 ("(S)moking constituted a serious risk to human health and that consequently measures designed to reduce the consumption of cigarettes fell within the scope of Article XX(b)"). See also Panel Report, *US – Gasoline*, para. 6.21: "(t)he policy to reduce air pollution resulting from the consumption of gasoline was a policy within the range of those concerning the protection of human, animal and plant life or health mentioned in Article XX(b)".
- 21 Marceau and Wyatt (2009) note that Article XIV of the GATS does not have an exception that is equivalent to sub-paragraph (g) of Article XX of the GATT. They submit that the Appellate Body may have had this in mind when interpreting sub-paragraph (b) of Article XX and that "it may have been influenced by the potential for an absurd incoherence pursuant to which one environmental protection measure may end up being permissible insofar as it impinged on trade in goods, but not permissible insofar as it affected trade in services".

- 22 The Appellate Body added that when an investigating authority proceeds in this manner it must ensure that the alternative benchmark it uses relates or refers to, or is connected with, prevailing market conditions in the country of provision (including price, quality, availability, marketability, transportation and other conditions of purchase or sale), with a view to determining, ultimately, whether the goods at issue were provided by the government for less than adequate remuneration (Appellate Body Report, *US – Softwood Lumber IV*, para. 120).
- 23 *Protocol Amending the General Agreement on Tariffs and Trade to Introduce a Part IV on Trade and Development*, BISD 13S/2 (1965).
- 24 Several WTO members have proposed the adoption of a transparency mechanism for preferential trade arrangements similar to that adopted provisionally by the General Council for regional trade agreements (see Job(08)103/Rev.1).
- 25 *Jus cogens* is a principle of international law from which no derogation is permitted. The prohibition of genocide, maritime piracy and slavery are examples of what would be considered by the international community as falling under this principle.
- 26 Trade & Environment Report, 36; WT/CTE/W160/Rev.4.
- 27 In accordance with the principle of effectiveness, the interpretation of a treaty should not deprive a treaty term of meaning. Marceau (2006) explains how the Appellate Body has used this principle to ensure the internal coherence of the WTO agreements.
- 28 There is also a Gas Exporting Countries Forum, which has 11 members and two observers. Together, they control nearly 70 per cent of the world's proven reserves of natural gas.
- 29 Victor and Yueh (2010) note the difficulties in expanding the membership of the IEA because of the requirement that its members also belong to the OECD. They thus submit that the "28-strong IEA includes many countries with small and shrinking energy needs but excludes giant energy consumers, such as China and India."
- 30 Preferential treatment provided under regional trade agreements need not be extended to other WTO members provided that the conditions in Article XXIV of the GATT (for goods) and Article V of the GATS (for services) are met. The Enabling Clause may be applicable to agreements between developing country members.
- 31 Annex 314 provides certain exceptions for Mexico in relation to foodstuffs. In the case of energy and basic petrochemicals, the relevant provision is Article 604.
- 32 Articles XI:2(a) and XX(g), (i) and (j) of the GATT are discussed above in section 1.
- 33 Article 7(7) of the ECT.
- 34 Article 13 provides certain conditions for expropriation. Expropriation needs to be in the public interest, non-discriminatory, carried out under due process of law and prompt, and adequate and effective compensation needs to be paid. Such compensation has to be calculated at the full market value at the time immediately preceding the announcement of the expropriation.
- 35 The breach of individual investment contracts by the host country is considered a violation of the Treaty. The investor can bring a dispute against the host state under Article 26 of the ECT.
- 36 Considering the importance of non-discrimination in the pre-investment stage, negotiations of a Supplementary Treaty were launched in 1995 but have not been concluded.
- 37 For further details, see the WTO Secretariat note containing a matrix on trade-related measures pursuant to selected MEAs (WT/CTE/W/160/Rev.4).
- 38 For a discussion of whether environmental measures may be justified under Article XIV of the GATS, see Box 27.
- 39 Some WTO members considered that measures taken pursuant to the Kimberley process are compatible with WTO rules. Thus, the Decision notes that the waiver "does not prejudge the consistency of domestic measures taken consistent with the Kimberley Process Certification Scheme with provisions of the WTO Agreement, including any relevant WTO exceptions, and that the waiver is granted for reasons of legal certainty".
- 40 A situation where the contractual agreement between two parties is affected by concerns that one party will gain undue bargaining power once investment by the other party has been committed.
- 41 Sometimes states have set up ad hoc arbitration arrangements to settle certain investment disputes between them, such as the Iran – United States Claims Tribunal.
- 42 Janow and Staiger (2003) suggest an economic interpretation of the view that an export tax can confer a subsidy to production in other sectors of the economy. This provides the basis for an alternative line of reasoning by which the panel might have argued that export restraints could never constitute specific subsidies.
- 43 This literature is based on the assumption of perfectly competitive markets. Ossa (2008) explores the role of trade agreements in an imperfectly competitive environment. While cross-border spillovers different from the terms-of-trade effect emerge in this setting, the role of a trade agreement remains that of neutralizing an international externality.
- 44 Bagwell and Staiger (2002), Chapter 6, provide an introduction to the formal models of enforcement in trade agreements.
- 45 In accession negotiations, the use of export duties has sometimes been regulated through commitments undertaken in Working Party Reports rather than through schedules of bindings.
- 46 See WTO documents TN/MA/W/1 and TN/MA/W/5.
- 47 See WTO document TN/AG/W/4/Rev.4, 6 December 2008.
- 48 See the discussion in sub-section E.2.(b)(iii).
- 49 This argument is an application of the Bagwell and Staiger (2002) case for trade cooperation based on mutually beneficial tariff reductions.
- 50 As seen in Section C, a dynamic model shows that these effect on the terms of trade are short-run and in the long-run measures may have the opposite effect. However, an analysis that highlights the immediate consequences of these policies is still useful as governments often value the short-run effects of their choice for political economy reasons.
- 51 See TN/MA/W/15/Add.4/Rev.3.
- 52 See Job(06)/14.
- 53 This is the case when no market failures are present. However, when property rights are poorly defined and the natural resources sector suffers from an open access problem, trade volumes may well be sub-optimally high. This situation will be further discussed below in the case of fishery subsidies.
- 54 See Bagwell and Staiger (2002), chapter 10.
- 55 WTO document TN/RL/W/213.
- 56 Subsidies that increase or maintain capacity (such as capital subsidies for boat-building) are distinguished from those that keep boats on the water (variable cost subsidies such as for fuel).
- 57 See TN/RL/GEN/135.
- 58 The full text of the communiqué can be accessed at: http://www.g20.org/Documents/pittsburgh_summit_leaders_statement_250909.pdf
- 59 See the discussion on the applicability of Article XX of the GATT to the SCM Agreement in subsection E.1.

- 60 Staiger and Sykes (2009) provide an interesting extension of this model. As in Bagwell and Staiger (2001a), the externality is purely local, but Staiger and Sykes (2009) allow for a domestic regulation, say a product standard, which implies a compliance cost for producers. This model shows that, in the absence of rules on non-discrimination, governments have an incentive to impose discriminatory product standards once tariffs have been committed. The reason for this is to shift part of the regulatory cost onto foreign producers. As in Bagwell and Staiger (2001a), when regulatory discrimination is prohibited by the treaty, governments still face an incentive to use domestic standards to erode market access commitments agreed in previous negotiations.
- 61 In *Brazil - Retreaded Tyres*, the Appellate Body had to examine whether an import ban on retreaded tyres could be justified under Article XX(b) of the GATT as a measure necessary to protect, human, animal or plant life or health. In its analysis of this issue, the Appellate Body underscored that the import ban had to "be viewed in the broader context of the comprehensive strategy designed and implemented by Brazil to deal with waste tyres". This comprehensive strategy included a collection and disposal scheme, which made it mandatory for domestic manufacturers of new tyres and tyre importers to provide for the safe disposal of waste tyres in specified proportions, as well as an import ban on used tyres (Appellate Body Report, *Brazil – Tyres*, para. 154).
- 62 See the discussion of Article XX of the GATT, in sub-section E.1.
- 63 Often different government departments will represent the same state in the various fora where international rules affecting natural resources are negotiated, raising the risk of incoherence. Internal coordination is essential to reduce the risk that a state assumes obligations in one forum that conflict with those it has assumed in other fora. It is also necessary to ensure that implementing measures are consistent with obligations under other international agreements to which a state is a party.
- 64 The WTO agreements include provisions on IMF/World Bank/WTO coherence. The WTO also cooperates with the Food and Agriculture Organization, World Health Organization, World Organization for Animal Health, and the World Bank in the Standards and Trade Development Facility. The WTO Secretariat has working relations with almost 200 international organizations (Lamy, 2007).
- 65 For an overview of the academic and policy debate on the costs and benefits of the regulation of investment policies within the WTO, see Hoekman and Saggi (2000) and the literature quoted therein.
- 66 As explained, the oligopoly case has not been analysed by the literature.
- 67 The European Commission, for example, has recently opened a formal anti-trust investigation of iron ore production joint ventures between two Anglo-Australian mining companies. The Commission will in particular examine the effects of the proposed joint venture on the worldwide market for iron ore transported by sea. Opening of the proceedings does not imply that the Commission has conclusive evidence of an infringement, but merely that it will investigate the case as a matter of priority (see http://thegovmonitor.com/world_news/europe/ec-opens-formal-antitrust-investigation-2-into-anglo-australian-mining-companies-22177.html). Similarly, De Beers has faced anti-trust prosecution by the United States Department of Justice in 1945, 1957, 1974 and 1994. The 1994 indictment resulted in De Beers pleading guilty, in 2004, to a violation of the Sherman Act for conspiring with General Electric to fix prices of industrial diamonds ("De Beers Agrees to Guilty Plea to Re-enter the U.S. Market", *New York Times*, 10.07.04, available at: <http://www.nytimes.com/2004/07/10/business/worldbusiness/10diamond.html>).
- 68 Gordon et al. (2003) empirically investigate the cost structure associated with transporting natural gas by a Canadian carrier and conclude that this carrier is indeed a natural monopoly.
- 69 The Reference Paper has been incorporated into the schedules of some 60 members and includes certain competition and regulatory disciplines for the telecommunications sector. On this, see also the proposals by the United States (S/CSS/W/24) and Norway (S/CSS/W/59).
- 70 Third-party access (TPA) refers to the possibility for a third party to access and use energy network facilities (such as pipelines, grids, storage facilities) against the payment of a fee to the owner or operator of such facility.
- 71 See Ukraine, Schedule of Specific Commitments, GATS/SC/144.
- 72 *Energy Services*, Background Note by the Secretariat, S/C/W/311, 12 January 2010.
- 73 An additional difficulty arises in relation to government procurement. The procurement of goods and services by governmental agencies for their own use is not covered by the main WTO disciplines. The GATT explicitly excludes government procurement from the national treatment obligation and, under the GATS, the most-favoured-nation treatment obligation as well as specific commitments do not apply to services purchased by government agencies. Procurement of goods and services is subject to a separate plurilateral Agreement on Government Procurement (GPA), which has been signed by 41 governments, mostly developed members. In practice, activities in relation to natural resources (for instance, exploration, exploitation, consulting, decontamination, environmental impact assessment, water distribution) may be subject to different types of contractual relationship between a public authority and a private supplier, including, *inter alia*, concession, build-operate-transfer and management contracts. These transactions will escape relevant disciplines whenever they can be considered a form of government procurement, although they may be subject to the GPA in the case of signatories. Uncertainty exists, however, concerning the scope of the definition of government procurement. For more on this issue, see Cossy (2005) and Musselli and Zarrilli (2005).
- 74 While an exhaustive discussion on how to promote innovation in resource-friendly technologies is beyond the scope of the present report, it is clear that the design of the IPR regime is only one element of this debate. A recent study by Lee, Iliev and Preston (2009) suggests that other forms of public intervention are essential. For instance, governments could create public funds, such as technology prizes, to promote innovation and stimulate international collaboration in the R&D process.
- 75 For a more extensive discussion of this point, see *World Trade Report* (2008).