

UNCTAD/DITC/TED/2003/4

United Nations Conference on Trade and Development

TRADE AND ENVIRONMENT REVIEW

2003

Article 2



UNITED NATIONS
New York and Geneva
April 2004

ARTICLE 2: ENVIRONMENTAL GOODS AND SERVICES: DEFINING NEGOTIATIONS OR NEGOTIATING DEFINITIONS?

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A. Introduction

At the Fourth WTO Ministerial Conference in Doha in November 2001, WTO Members agreed to negotiations on “*the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services*”.¹ The Doha Ministerial Declaration (DMD) states that negotiations on trade liberalization in environmental goods and services (EGS) should enhance the mutual supportiveness of trade and the environment, suggesting a potential for “win-win” outcomes.² The uncertainty about definitions and classification of the environmental industry enhances the impression that there is everything to play for in the negotiations and that there are potential gains for developed and developing countries.

Even a cursory look at the environmental industry suggests that the developed countries will be looking for winning propositions in terms of market access. For developing countries, it is access to EGS that is going to be more important. Their potential gains are in improved environmental conditions and resource management at home, and in strengthened capacity to comply with environmental requirements abroad.

This “win-win” scenario begs some uncomfortable questions. First, does it mean that environmental benefits will go to one set of countries and trade gains to another? Contrary to the economic theory, the negotiating “logic” at the WTO says that imports are “bad” and exports are “good”. This logic has been defied only in three sectoral agreements reached since the Uruguay Round — on information technology, financial services and basic telecommunications services, where a large number of developing countries that had signed on were not, and did not expect to become, exporters in the near future. The mandate provided for in paragraph 31 (iii) of the Declaration, although sector-specific, does not amount to a sectoral agreement. In fact, paragraph 16 of the Declaration states that the negotiations “shall aim to eliminate barriers to products of export interest to developing countries”. The Declaration also reaffirms the guidelines for the services negotiations in that they “shall aim to increase the participation of developing countries in trade in services”.³

Second, if the liberalization of trade in EGS is so clearly in the interests of the developing countries, why have they not liberalized their environmental markets already? Or, to put this question in the future tense, what is it exactly that the WTO Members may achieve with the negotiations that they would not be able to achieve without them? Even if there were no paragraph 31 (iii) in the Declaration, EGS — no matter how they were defined — would have been within the scope of the negotiations. On the other hand, the

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How to ensure that liberalization efforts at the WTO are commercially, financially and technically viable?

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liberalization of trade in EGS is not going to take place automatically just because they have been defined as environmental.

Third, will the liberalization of trade in environmental goods take place in conjunction with environmental services? The language of the Declaration is ambiguous. No such link has been established in the negotiations so far. On the other hand, the recognition of the integrated nature of environmental activities is the key feature of current definitions and classifications of the environmental industry. This leads some analysts to believe that trade negotiations on environmental goods and environmental services have to be put “on a concurrent path”.⁴ Others disagree and point to divergent trends in trade flows, with international sales of environmental equipment (hardware) outpacing those of services (software), to growing trade in environmentally preferable products (EPPs), and to a broadening range of commercial services that are integral to environmental activities.⁵

Fourth, how to balance market access with public services? Environmental infrastructure services, such as water and wastewater management, are of vital importance to the economy and society, be it in terms of public good, public interest or public ownership. Liberalization may lead to increased participation of domestic and foreign private actors in these sectors and raise issues of ownership of, and control over, essential environmental resources. This question takes on particular importance owing to the emergence of “public services trans national corporations (TNCs)” in the water sector, which is in part influenced by other public utilities, especially electricity. Although Governments’ *right to regulate* was reaffirmed in the Doha Declaration,⁶ a country’s *ability to regulate* is relative to its economic and negotiating capacity.

Fifth, how to ensure that liberalization efforts at the WTO are commercially, financially and technically viable? Such efforts should be considered in connection with possibilities of financing these efforts. No institutional linkages have been established between the negotiations and all the different forums that deal with development finance and assistance. There are constraints on the supply side to which the WTO is ill equipped to respond. The question is, how to promote “positive coherence” between the negotiations in the WTO and environmental infrastructure projects financed by multilateral financial institutions, in terms of meeting financial needs and building capacity, as opposed to pre-empting negotiating margins and forcing premature liberalization?

This article is an attempt to project these, and other, related issues onto the negotiations in the WTO. Part I looks at how EGS are defined conceptually and in market terms; Parts II and III review negotiating approaches to environmental goods and services; Part III touches on systemic issues; and Part IV offers some conclusions.

B. Defining environmental goods and services

1. Concepts

The notion of an *environmental industry* seems to be a misnomer against the background of a constant shift in the economic structure towards more sustainable practices. The industry is rapidly growing and changing, and it suffers from a lack of clear identity and poor representation as a sector in its own right. In fact, it is “less of a sector than an agglomeration of providers of many types of goods, services and technologies that are usually integrated into production processes”.⁷

“Environmental restructuring” makes any definition relative. According to OECD estimates, half of the environmental goods that will be in use 10 to 15 years from now do not currently exist.⁸ The bulk of the industry value is in low-tech services, which are not much different from routine, housekeeping functions and require engineering and management skills as well as capital rather than proprietary technology. At the high-tech end — that is, clean(er) technologies and upstream changes in products and process and production methods (PPMs) — it is difficult to draw the line between pollution prevention and better process control.

National definitions of the environmental industry vary in criteria and scope. For example, Canada, Japan and the United States have adopted broad definitions of the environmental industry. Italy, Germany and Norway, on the other hand, have chosen narrow ones, limiting their environmental industry to essentially pollution prevention activities and related commercial services, such as engineering, R&D and, in some cases, consulting.

At the international level, the OECD and the Statistical Office of the European Communities (Eurostat) have taken the lead in defining and classifying the environmental industry for analytical purposes as “activities which produce goods and services to measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and ecosystems”.⁹

This definition serves as a basis for an indicative list that extends across all environmental media. It includes goods and services “*which provide environmental protection in different domains: water, solid waste, air, soil, noise, natural resources, and miscellaneous services*”¹⁰ and classifies them under three broad headings — pollution management, cleaner technologies and products, and resource management.¹¹

As far as environmental goods are concerned, they are defined in two ways: *through environmental services, or as an “environmental service”*. The first category comprises goods that are integral or incidental to the delivery of environmental services, such as wastewater treatment or waste management. The second category consists of goods that are *environmentally preferable* to other, similar, *like* in trade parlance, products.¹² These two categories are not mutually exclusive. In the OECD classification, EPPs fall into cleaner technologies or resource management groups, and may or may not be integral or incidental to the delivery of environmental services.

There is no universally accepted understanding or concept of EPPs.¹³ UNCTAD defines EPPs as products which cause significantly less “environmental harm”¹⁴ at some stage of their “life cycle”¹⁵ than alternative products that serve the same purpose, or products the production and sale of which contribute significantly to the preservation of the environment.¹⁶ A typical basket of EPPs includes goods that are superior to petroleum-based products, for example jute and biofuels, or produced in an environment-friendly way, for example organic coffee, cocoa, tea, chemical free cotton and tropical timber from sustainable forests, or goods that contribute to the preservation of the environment, for example bio-pesticides.¹⁷

Recycling, reuse, biotechnology and energy technologies have extended the range of EPPs to include among others energy-efficient lighting fixtures, washing machines, televisions and audio equipment; low-toxicity or non-toxic paints; construction materials such as flooring made from recycled plastic; biodegradable material, zero-emission and hybrid technology automobiles; methane and other biofuels derived from industrial or agricultural waste; and renewable electricity generated by solar and wind technologies.

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There are trends towards product development and market creation in *ecosystem goods and services*, for example bio-trade or Kyoto Protocol markets.¹⁸ Biodiversity-based products have a high potential for value-adding and serve as a source of innovation in the biotechnology, cosmetics, pharmaceutical and agrochemical industries.

Whether or not climate-related and some other ecosystem services can be considered environmental services and potentially benefit from preferential treatment in trade is a question for the future. Services that have emerged from the Kyoto Protocol consist of emissions trading and emissions offset services. The Kyoto Protocol only has provisions for emissions trading at the State-to-State level, for the States' own allowance purposes. It recognizes the potential role of private trading, but makes no actual provision for it. If, and when, transactions take place at the company-to-company level, it would be difficult to distinguish emissions trading from other kinds of capital market transactions. As far as emission offset services are concerned, that is the process of the issuance of the permits themselves or their use for government compliance purposes — they would constitute a form of government regulatory activity rather than a service.

2. Markets

As it is typically less costly and more accurate to survey the sales side of an industry, all market estimates are based on the supply side approach and made according to three sources of revenue generation: services, equipment or resources.

The total market size is estimated at US\$ 550 billion¹⁹. The environment industry grew by over 14 per cent between 1996 and 2000. Over-capacity slowed annual growth in the developed countries to 1.6 per cent in 2000 and 2001. During the same period annual growth in developing countries was at 7 to 8 per cent. Analysts expect that the industry will continue to expand, reaching over US\$ 600 billion by 2010.²⁰ In relative terms, this is not as big as the steel or agriculture markets, but roughly the same size as the pharmaceuticals and information technology markets. Most of the growth will continue to take place in developing countries and economies in transition, at an annual rate of 8 to 12 per cent.

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Market forecasts reveal the following scenarios: (i) significant technological upgrading in the energy sector, which is set to become the fastest growing sector as electric power generating companies install more efficient pollution-control equipment and replace old, coal-and oil-fired capacities with generating sets based on natural gas or renewable energy; and (ii) increasing trade volumes, particularly in sectors where sales price is affected by labour costs.

Markets in developed countries are mature: they are highly competitive, with a sophisticated customer base, and experience slow or negative growth in many segments. Environmental regulations are by far the most important factor. However, in spite of regulatory drivers, environmental markets are very sensitive to economic cycles. Other important factors are education, information and consumer pressure, economic and financial considerations and tax policies. Mergers, acquisitions and general consolidation are affecting the structure of the industry as market instruments offer the potential to augment regulations in some segments, creating an incentive for “better than compliance” through partial internalization of environmental costs. This shift has tipped the balance in the integrated packages of technology-intensive environmental activities in favour of services and more cost-effective multimedia approaches.

Conversely, markets in developing countries represent compelling environmental and resource management *needs* associated with population growth, urbanization and material-intensive patterns of economic activity. The usual sequence of evolving priorities is the following: water delivery, wastewater treatment, air pollution control, solid waste disposal, hazardous waste management, and remediation. Turning these needs into *demand* for environmental goods and services is a gradual process, which hinges on a number of factors: regulations and enforcement; availability of capital; and the nature of the ownership and contract mechanisms to ensure collection of fees, especially for water and waste infrastructure projects etc.

Developing countries are not a homogeneous group, however. Most are in the first phases of addressing environmental problems through command and control instruments. This is likely to generate demand for a broad spectrum of environmental goods and services relating to health and sanitation. Other developing countries are introducing market instruments to complement regulation, which generate differentiated demand for goods and services in cleaner technologies and resource management. The gradual shift towards cleaner production is increasingly evident in both national and development cooperation programmes. Cost-efficiency mainly drives this trend, because of the gap between environmental needs and financial resources available for environmental purposes. Environmental services in developing countries are also supplied through joint ventures.

The environmental industry is characterized by a few dominant multinationals operating in the water and wastewater management sectors, and a large number of small and medium-sized firms in solid waste management. Water and wastewater services tend to be natural monopolies and, given their importance to human health, the environment and social policies, are influenced heavily by the public authorities. They are mostly provided through monopolistic structures, public or private, with the public sector being the traditional main supplier. Competition in these sectors takes place *for* markets, rather than *in* markets. These services are highly subsidized in many developing countries, but also in some developed countries.

Municipal services such as water delivery, water treatment and garbage collection are gradually being privatized in the United States, though not to the extent that these services, especially water, have been privatized in European countries, particularly France and the United Kingdom. Some developing countries and regional groupings are positioning the private sector as an important player in environmental infrastructure services. At the same time, in a number of developing countries, the poor performance of private companies has led the Governments to rethink private sector involvement – both domestic and foreign – in the delivery of environmental services.

A variety of arrangements are formed along the public-private continuum, such as management contracts, build-operate-transfer (BOT) contracts and concessions. Working out the equation of asset ownership, capital needs and risk is not easy and requires building regulatory capacity. Multilateral and bilateral lending agencies are important factors in determining how environmental projects are developed and operated by the public and private sectors.

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3. Trade flows

The combination of over-capacity in developed countries, industry consolidation, privatization and deregulation of utilities increases the “tradability” of environmental goods and services, particularly in more mature areas such as water and waste management, and air pollution control (APC).

The European Union, the United States and Japan have considerable surpluses in trade. The European Union is the biggest exporter;²¹ the United States and Canada form the biggest market for EU products and services. South-East Asia has recently been replaced as the second biggest market by countries acceding to the European Union. Some smaller countries, for example Finland and Norway, have very internationally oriented industries that export almost half of their production. Australia and Canada are expanding their environmental exports, but do not have a large share of the global market. Developing countries are net importers of EGS. Their exports tend to be oriented mainly towards regional markets.

However, recent trends in global environmental trade flows indicate a considerable slowing of growth in export revenues generated by environmental companies in developed countries. For example, in the case of the United States, statistics derived from annual surveys by Environmental Business International Inc. indicate that environmental exports (goods and services) grew by an average of 17 per cent per year during the five-year period from 1993 to 1997, and export growth rates subsequently fell to an annual average of six per cent during the five-year period from 1998 to 2002. Firms in other developed nations such as Germany and Japan also report decreased activity in international markets.

Capacity in environmental goods and services is growing in certain developing nations, mostly from involvement in partnerships with established foreign firms but also from the increased demand in their domestic market. However, there are few data to indicate that any of this capacity is translating into exports.

The slowing of overall economic growth is a significant reason for the recent decline in environmental exports, particularly in South-East Asia and Latin America, but interviews with a number of companies by *Environmental Business Journal* indicate that the vast majority of environmental firms consider developing markets too risky and not profitable enough to validate the additional efforts of developing overseas business. This is particularly true of small companies that make up the vast majority of the environmental industry, but many large companies have pulled back from international markets as well. Both Waste Management Inc. and Allied Waste, the United States' largest and second largest environmental firms respectively, have divested themselves of foreign operations and eliminated any efforts to develop overseas business in solid waste. Japanese equipment firms have responded to tighter economic conditions by focusing on more predictable domestic markets. The United States, German and Dutch firms have cited inconsistent market demand and other barriers to pursuing more work outside western Europe, including public procurement problems, tariffs, difficulty in collecting payments and currency issues among others.

There is anecdotal evidence from interviews with environmental industry executives that capacity in environmental goods and services is growing in certain developing nations, mostly from involvement in partnerships with established foreign firms but also from the increased demand in their domestic market. However, there are few data to indicate that any of this capacity is translating into exports.

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Overall, while the current data indicate that international trade flows in EGS appear to be growing, it is clear that trade in EGS is not growing as fast as it once was. During the period from 1990 to 1997, in the opinion of environmental executives, there seemed to be more opportunity in developing markets in purely commercial terms and compa-

nies and even Governments were more actively promoting programmes for environmental exports based mostly on the prospects for export growth. Experiencing difficulties in international environmental markets led many firms and Governments to pull back, and more efforts in international environmental exchange since the year 2000 have been oriented towards developmental rather than commercial goals. The prevailing business climate in the environmental industry makes the removal of trade obstacles more pertinent than ever before.

4. Barriers to trade

Actual or potential limitations to trade in EGS arise from tariff barriers and non-tariff barriers (NTBs) in the case of goods, and from restrictions with respect to market access and national treatment in the case of services.

Currently applied and bound tariffs on many capital goods used to provide pollution-management services are low in developed countries — generally under three per cent for products on the OECD list.²² In most developing countries these tariffs remain relatively high, with the bound tariffs ranging from 20 to 40 per cent, and applied rates mostly ranging from 10 to 20 per cent. In some cases the rates are considerably higher. In practice, imports of environmental goods may sometimes benefit from incentives.

Technical regulations affect the type of environmental goods used to meet environmental requirements. The lack of uniformity of environmental requirements in different national markets has been an important NTB. In particular, standards and certification requirements affect trade in EPPs. On the other hand, trade in niche products seeking to enter new markets may be hindered by the lack of appropriate standards for such products. Also, imported environmental technologies need to be tested and certified by local authorities in individual markets.

As compared with other sectors, liberalization of trade in environmental services through binding commitments under the General Agreement on Trade in Services (GATS) appears so far to be rather limited. Also, the scope of existing commitments is restricted in a number of cases by horizontal limitations and restrictive definitions of the activities covered.²³ On the other hand, few limitations to market access and national treatment have been scheduled. In practice, WTO Members' policies may be more liberal than what is reflected in their schedules.

The main way to trade environmental services is through commercial presence (mode 3) and the temporary movement of natural persons (mode 4), given the need for highly specialized professionals in many of these services. Therefore, the main obstacles to trade have to do with restrictions on foreign direct investment (FDI) and the participation of foreign service suppliers in domestic industries. Commercially meaningful liberalization of environmental infrastructure services requires market access in environmental support services such as construction, engineering, legal and consulting services, where mode 4 is an increasingly relevant factor.

Where there is a strong public function to the provision of certain essential services such as water supply and waste management, trade may be affected by monopoly, public or private, or exclusive supplier rights in respect of public utilities. Government procurement is also an important factor as Governments are often the largest, and sometimes the only, buyers of environmental goods and services. Subsidies provided to the

domestic environment industry may become trade barriers for environmental goods and services from other countries.

The production of environmental goods and services, particularly in developing countries, implies substantial access to environmental technologies, and a significant amount of environmentally sound technologies (ESTs) involve proprietary knowledge.²⁴ Barriers to trade in environmental goods and services may also be created where specific patented or patentable technical knowledge is adopted as a standard for an industry, through governmental regulation or through standards.

The experience of the Asia-Pacific Economic Cooperation (APEC) with the Early Voluntary Sectoral Liberalization initiative (EVSL), which included the environmental sector, provides an interesting background.

C. Negotiating environmental goods

1. Pre-negotiating history: APEC

The experience of the Asia-Pacific Economic Cooperation (APEC) with the Early Voluntary Sectoral Liberalization initiative (EVSL), which included the environmental sector, provides an interesting background. It is important to recall that the EVSL initiative was launched in 1997 when WTO Members had just completed the Information Technology Agreement (ITA). The ITA was initiated by the Quad countries, and was concluded when economies accounting for more than 90 per cent of trade had signed up. The idea behind the EVSL was to replicate the ITA process, with APEC economies rather than the Quad, or some other groups of countries, picking the sectors. The original intention was for APEC to develop frameworks for the agreements, namely product coverage and phase-out periods for tariffs. Once the framework agreements had been developed, APEC would go to the WTO to seek broader support for the proposals.

APEC spent the rest of 1997 identifying the sectors, and 1998 developing framework agreements. Along the way, some economies pushed for the conclusion of agreements within the APEC context. Trade liberalization at APEC is propelled not by negotiations but by voluntary initiatives, individual and collective. As nothing much had happened on that account, APEC economies have returned to the original idea. They shifted the tariff part of the EVSL to the WTO, and focused on dealing with NTBs and economic and technical cooperation (*trade facilitation* and *Ecotech* in APEC parlance), which was actually the innovative part of the EVSL.

Much discussion these days is centred on the APEC list of environmental goods. The list was drawn up on the basis of *individual nominations*, not unlike the request and offer procedure used in trade negotiations. In drawing up its list, APEC referred to the OECD/Eurostat definition.²⁵ However, there are differences between the APEC and the OECD lists. For example, minerals and chemicals for water and waste treatment appear only on the OECD list, while the APEC list includes a broader set of goods for environmental monitoring and assessment. The lists are very similar with regard to solid and hazardous waste. In other areas, such as APC, they are remarkably different, which is in part due to the fact that some multiple-use goods are listed under different headings. APEC's approach — *individual nominations* — has recently been advocated by the US delegation in the context of negotiations at the WTO.

Whether WTO Members will be able to find viable trade interests and reconcile these in the negotiations depends on the way these goods are defined for negotiation purposes; the treatment of these goods in the Negotiating Group on Market Access (NGMA); the relative importance of tariffs and NTBs; and, last but not least, the supply capacity.

Whether WTO Members will be able to find viable trade interests and reconcile these in the negotiations is anybody's guess, and the guesswork is being done along the following lines: the way these goods are defined for negotiation purposes; the treatment of

these goods in the Negotiating Group on Market Access (NGMA); the relative importance of tariffs and NTBs; and, last but not least, the supply capacity.

2. Definitions and criteria

While defining environmental goods for analytical or statistical purposes is a matter of fact, defining environmental goods for the purposes of trade negotiations is a matter of a policy. As is always the case with distinguishing between *like* products, it matters whether one likes – or does not like – a particular product. And given the differences in negotiating perspectives, countries may find it difficult to share their likes and dislikes.

This is not to say that the negotiations cannot proceed in the absence of an agreed definition. They certainly can, and, at least for the moment, this seems to be the most likely scenario. For instance, the negotiations may turn into a “barter economy”, with WTO Members trying to make deals by seeking to identify bilateral coincidences of wants. In this case, a list of environmental goods may evolve as a postscript to a bottom-up process of bilateral requests and offers, with subsequent multilateralization of concessions.

It is also possible that WTO Members will seek to agree on such a list *ex ante*, based on a *convention*, namely a common understanding or a list rather than a strict definition. Such a list may be based on a combination of criteria, which will have to be derived from the concept of a *like product*: end-use; properties, nature and quality; consumer tastes and habits; tariff classification; and product-related PPMs. For instance, the (predominant) end-use criteria can be applied to goods in the pollution control category, performance standards to energy goods, and specific, non-PPM criteria to EPPs. Some environmental goods can be captured in the Harmonized Commodity Coding and Description System (HS). These same criteria may alternatively be used for an *ex-post* assessment of liberalization in environmental goods in case they receive no special treatment in the negotiations.

Whatever the criteria for environmental goods are, making these criteria operational is going to be difficult as countries will have to grapple with problems such as confirming systems to be used at customs, their administrative costs, and the identification of environmental goods among similar products.

Differentiation by end-use is, by and large, difficult to make operational for customs purposes. There are some high-tech approaches to solving the problem. However, the bulk of volume — and value — of trade in environmental goods is low-tech, and it would not make much sense to apply high-tech methods to low-tech goods. For high-tech environmental goods, end-use is less of a problem as most of them tend to have been designed and made specifically for environmental purposes.²⁶

Few HS headings at the 6-digit level consist uniquely of goods that could be considered part of the environmental industry. Procedures used to classify goods in the HS do not easily accommodate distinctions other than those based on physical characteristics or function. In addition, the HS tends to be more specific for some goods, for example chemicals used for environmental purposes, and less specific for others, for example electrical or mechanical goods.

The two options available to countries in dealing with products that are currently not captured in the HS are to amending the HS at the 6-digit level, or to introduce national

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tariff lines, with their subsequent harmonization. Because of the point reached in the current cycle by the World Customs Organization (WCO) in amending the HS, it would be difficult to make new changes within the time frame of the Doha negotiations.²⁷

APEC members adopted a pragmatic approach to the problem, based on two criteria: (i) prevalence of the environmental goods in a given tariff heading, and (ii) the importance of a particular product to the environmental industry. For instance, if all or the majority of goods in a 6-digit category were used for environmental purposes, all products within that 6-digit category would be included. If “environmental goods” within a 6-digit category were in the minority, but APEC economies agreed that those products were important to the environmental sector, again the entire 6-digit category would be included. This approach provided the rationale for inclusion of the most important environmental goods at the 6-digit level.²⁸ If APEC members could not agree at the 6-digit level but still felt that coverage of a particular good was warranted, they would leave it up to each individual member to reflect that good in a narrower, 8- or 9-digit level national tariff line, as appropriate, which explains the use of “ex” headings in the APEC list.²⁹

Identifying EPPs would in most cases require (third-party) *certification or eco-labels*. As there is no single, international definition of this class of products, labelling and certification schemes tend to proliferate. A number of such schemes have been notified under the Agreement on Technical Barriers to Trade (TBT). In fact, over the past decade, notifications relating to environment have been the largest category — 10 to 15 per cent according to the WTO Secretariat.³⁰ Within the environmental category, the largest subcategory of notifications involved product performance standards related to energy efficiency.³¹

The scope for the application of PPMs as criteria in the WTO is limited to those that are expressed in physical, chemical, functional differences of *like* products. The European Union seems inclined to include certain products on the basis of PPMs. The majority of WTO Members oppose defining environmental goods through PPMs as PPM-based criteria can create a new set of standards, prompt changes in customs classifications or lead to systemic problems.

In a recent paper, the OECD looked into customs classification issues raised by various criteria.³² The WCO Secretariat has examined trade flows in some categories of environmental goods and may be asked to provide advice on some practical questions that may arise in the negotiations.

3. Treatment of environmental goods in negotiations on market access

Environmental goods may receive no special treatment in the NGMA — that is, they will be subject to the same modalities as other non-agricultural goods. Or the WTO Members may agree on tariff liberalization on a much broader range of goods, effectively obviating the need for any special treatment of environmental goods. In both cases, the implementation of the agreement stipulated in paragraph 31 (iii) of the Doha Declaration would effectively turn into an *ex-post* environmental assessment of trade liberalization in non-agricultural goods.

Should environmental goods receive special treatment in terms of deeper cuts or even a zero-for-zero approach, WTO Members would have to decide on the coverage of the negotiations, which would bring to the fore issues relating to definitions and criteria.

As this article is being written, the priority is being given to reaching agreement on modalities for reducing tariffs on *all* goods. Following the completion of this exercise, the NGMA would evaluate whether additional reductions were necessary on environmental goods.

The discussions on environmental goods have demonstrated a need to promote practical approaches to defining environmental goods for negotiations purposes, which would require linking definitions to modalities. This is the rationale behind the proposal made by the United States at the July Special Session of the Committee on Trade and Environment (CTESS). The proposal, largely based on APEC's experience, argues for *two* lists of environmental goods. A *core list* would comprise products on which there is consensus that they constitute environmental goods. On the basis of experience with the EVSL, the United States proposes that the *core list* comprise the following two categories: environmental remediation or pollution prevention, and clean technologies. In all those cases where consensus cannot be reached for particular goods, individual Members could nominate these goods for a *complementary list* that would be available for consideration by all WTO Members. The nominations should enjoy some support from other Members to avoid a situation where the complementary list would turn into a wish list. The proposal establishes some conditions for the nominations and provides for less than full reciprocity, but leaves open procedures and criteria.

If implemented, the US proposal would expand the scope for the negotiations on environmental goods. The question is whether it would be beneficial to developing countries, and under what conditions. One way to look into this question is to create *model lists* of environmental goods of export and import interest to individual countries.

4. Relative importance of tariffs and NTBs

Tariffs on environmental goods in developed countries are at nuisance levels, while tariffs in developing countries follow the general pattern for industrial products. The applied rates have gone down since 1996. The negotiations may reduce bound rates and increase the coverage of bindings, but this will not amount to much in real terms of reducing tariff assistance in developing countries. For EPPs, tariffs are even less of a problem. Ironically, most proposals skip the issue.

While certification and labelling schemes alone cannot define the basket of environmental goods, discussing the issues involved might help in designing policies that go beyond tariff-based approaches. It is important to ensure that any selection of categories of EPPs for negotiating purposes is based on objective criteria to avoid possible new NTBs and additional costs, for example for certification. For instance, the proposal by Japan that energy-efficient consumer products be included may give rise to some practical problems. Eco-labels have been a source of concern for developing countries, and any discussion of eco-labelling in the context of environmental goods should address both their advantages and disadvantages. One issue is repeatedly being raised in discussions on EPPs: environmental regulations, including packaging and recycling directives in developed countries, especially European countries, discriminate against environmentally friendly and bio-degradable products from developing countries and favour local recycling and waste disposal systems.

The ongoing work in the OECD on the role of third-party certificates in the identification of goods defined by objective criteria, such as energy consumption, is of interest. So is the work of the International Energy Agency on tariff and non-tariff barriers to

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exports of various technologies used to exploit renewable energy, and UNCTAD's work on harmonization and equivalence in organic agriculture.

5. Supply capacity

The proposed lists of environmental goods are selective in their coverage and centred on environmental equipment, chemicals (OECD list), scientific instruments (APEC list) and a few energy-efficient consumer products (Japan's list) and technologies (Qatar's proposal). In general, developing countries are net importers of these products and their applied tariffs are higher than those in the developed countries.

During the period from 1996 to 2001 developing countries as a group were net exporters for only 14 of 182 environmental goods on the OECD and APEC lists.³³ Examples include clean fuels (ethanol), chemicals, articles of cast iron, some energy-efficient goods such as fluorescent lamps, space heating and soil heating apparatus, thermometers, pyrometers, and artisanal manufactures such as hand brooms.

Trade flows between developed and developing countries in goods on the OECD and APEC lists do show an improving balance for developing countries.³⁴ However, this trend has to be adjusted for the shifting horizon of environmental industry, where time is a factor. Besides, since the lists identify environmental products by a large number of tariff lines at lower than the 6-digit level of the HS, and the statistics have been generated at a 6-digit level, the data for a large number of these products are inflated. South-South trade may be relatively more important, in particular trade between developing countries in Asia. Trade data for all regions show that the products on either the APEC or OECD lists represent not more than three per cent of exports and not more than six per cent of imports of manufactured goods, i.e. products covered by the negotiations in the NGMA.

Differing export structures in developing countries on the one hand, and the importance of South-South trade on the other, may lead to a wide differentiation of negotiating approaches and views on definitions and criteria. A closer look at the hypothetical universe of "environmental goods", through the lens of APEC and OECD lists and the proposals made by Japan³⁵ and Qatar,³⁶ reveals a mixed picture. It is impossible to second-guess the negotiators and predict which categories of products will eventually receive the support of the WTO membership. However, if one were to draw a "vector" of some views that have gained currency in para-WTO discussions, it would point to the following conclusions:

- End-of-pipe pollution control equipment (OECD and APEC lists): the views expressed are generally positive, except for items with significant other industrial uses;
- Minerals and chemicals for water/waste treatment (OECD list): positive;³⁷
- Monitoring and testing equipment (APEC list): there is a preference for complete systems specifically designed and made for environmental purposes, with high-tech content;
- Renewable energy (OECD and APEC lists): positive, except for large hydraulic turbines;
- Energy-efficient consumer products (Japan's proposal): generally negative;
- Low carbon, natural gas to liquid fuels (diesel, naphtha) and energy technologies (Qatar's proposal): there is a feeling that the proposal raises issues with important implications and may better be left to the Kyoto Protocol.

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The search for products of export interest to developing countries revolves around EPPs, more specifically:

- Non-timber forest products and products derived from traditional knowledge: the views are positive;
- Products made with natural fibres: positive;
- Handloom products and products made using natural dyes: positive;
- Organic agricultural products:³⁸ negative, also negative with regard to other products identified on the basis of non-product-related PPMs such as certified timber products and fair trade products.

D. Negotiating environmental services

Environmental services play an important role in the ongoing negotiations under Article XIX of the GATS. Most developing countries have been requested to undertake specific commitments in all environmental services, the requests largely coming from developed countries. Some members have incorporated new, or improvements in existing, commitments: of 26 initial offers, 9 have incorporated environmental services. The European Union has made requests for liberalization of environmental services to 64 WTO members, but on a differentiated basis. The proposal by the European Union is indicative of the strong trade interest of EU companies in all environmental services.

At the present stage, the negotiations on environmental services raise the following issues: increased country coverage and reduction of barriers to trade, especially for mode 3 and mode 4; updating the classification of environmental services for negotiations purposes; a common understanding of what is meant, in a commercial sense, by some proposed new categories of services such as biodiversity protection, remediation and clean-up of soil and water; a need for a clear picture of the extent and scope of subsidization of environmental services; government procurement; qualification and certification requirements for individual service providers; tied aid;³⁹ and technology transfer⁴⁰. The task of the negotiations is to set the right framework, which would require promoting convergence on the classification and identifying and reducing the main barriers to trade.

Environmental services differ greatly in market structure and behaviour, regulatory frameworks and technological development. Although the Services Sectoral Classification List (W/120), based on the Provisional Central Product Classification (CPC Prov.),⁴¹ is the main instrument used in the WTO, Members are free to use any classification they see fit or to develop a classification of their own. In any case, it is useful to distinguish between (a) environmental infrastructure services, mainly related to water and waste management, (b) non-infrastructure, professional environmental services, comprising most of the activities in CPC Division 94, for example site clean-up and remediation, cleaning of exhaust gases, noise abatement, and nature and landscape protection; and (c) related services with an environmental component, classified under different divisions in the CPC, such as construction or engineering services. These distinctly different categories of environmental services will require different approaches in the negotiations, as well as on the domestic front.⁴²

Environmental services differ greatly in market structure and behaviour; regulatory frameworks and technological development

1. Environmental infrastructure services

Environmental infrastructure services have some of the characteristics of a public good, and the key concerns in these services are universal access and prices. The overriding objective is to build domestic capacity by aligning liberalization with evolving

developmental and environmental priorities. This objective will move to the forefront of issues relating to domestic regulatory regimes.

GATS neither requires nor precludes a particular regulatory regime. WTO Members are free to design a regime of infrastructure services regulations according to their national priorities and development strategies. They must, however, observe certain GATS disciplines when adopting and implementing particular regulatory instruments. They must also be aware that GATS creates a momentum towards liberalization of service regulation.⁴³

WTO Members choosing a regulatory regime that relies on government intervention and restrictions of economic activities may have to be more aware of possible constraints of GATS on national regulation than WTO members opting for solutions relying on competition and market forces.

The GATS in its totality does not apply to services supplied in the exercise of governmental authority that are not provided on a commercial basis or in competition with other service suppliers. GATS gives WTO Members the flexibility to maintain these services as a monopoly, public or private, or open them to competing suppliers, but to restrict access to national companies.

The US approach is of interest. The US offer applies only to environmental services open to private sector participants and does not give foreign service suppliers the right to acquire or invest in government monopolies supplying services. This offer does not include water supply or distribution as the United States considers that GATS is not the appropriate vehicle for pursuing privatization of US public services.⁴⁴

WTO Members who want to commit certain sectors should carefully assess their regulatory regime and the implications of market access and national treatment for it and should also consider their need for future regulatory flexibility when scheduling limitations to their commitments. Arguably, the specific commitments of market access (Article XVI of GATS) and national treatment (Article XVII of GATS) have the greatest potential impact on national regulatory regimes.

Public monopolies also constitute a restriction of market access and require scheduling. The national treatment obligations may have even a greater impact. An issue most relevant to public services is subsidies. Since there are currently no specific regulations on subsidies in GATS, a discriminatory subsidy could violate national treatment.

Water regulation often pursues goals that are specific to the water sector, such as managing scarce resources, guaranteeing drinking water quality, and aiming at or securing universal access to water. Water regulation can also aim at other goals such as efficiency of distribution, transfer of technology or rural and agricultural development. Some of these goals may require instruments that could be incompatible with market access and national treatment and may therefore require the scheduling of limited commitments or abstention from commitments altogether.

GATS is a flexible instrument, but only if it is used in such a way.

GATS is a flexible instrument, but only if it is used in such a way. Options available to developing countries in managing the impact of liberalization of public services under GATS include horizontal exclusion of public services (e.g. Dominican Republic); sector-specific exclusion of public services (e.g. Norway and Switzerland); commitments limited to private sector suppliers (e.g. sewage services in the United States); sub-sectoral carve-outs, for example for infrastructure; and specific limitations to exclude certain

regulatory measures, for example subsidies. Developing countries may also seek to impose limitations on market access commitments in the form of ceilings on prices for publicly supplied goods, minimum level of the share of profits that must be reinvested in the national infrastructure, and technology transfer and training, in order to build capacity.

WTO members that want to rely on domestic services and service suppliers in a particular sector, or who want to open these sectors to foreign suppliers but retain a maximum degree of regulatory flexibility, may consider remaining unbound in that sector, — that is, not making any commitments. Learning-by-doing will require Governments to go through an iterative regulatory process. At the early stages, it is critical to retain flexibility to reverse policies that are not working, which is much easier to do in the absence of GATS commitments.

2. Professional and environmental support services

The growing scope for prevention activities increases the importance of environmental professional and support services. Professional environmental services are generally not subject to market access and national treatment limitations. Since these services tend to be knowledge-intensive and provided on an integrated basis, the key issues here are access to technology and know-how, capacity building, certification and recognition of qualifications, and tied aid as a restriction on trade.

There is a range of services with an environment component, in other words, services *related to the environment*. These are multiple-use services to which the questions of definition and coverage are as relevant as they are to environmental goods. With regard to these services, market access goals should be set carefully in order to limit the danger of countries' being drawn into unintended commitments. For instance, countries that have made fully liberal commitments in the environmental sector in all modes of supply may find themselves committed, as a consequence, to liberalization in construction, engineering, legal, accounting, auditing and management consulting services.

Some developing countries see opportunities for market access in these services.⁴⁵ For example, Colombia argues for the development of a model list that would include certain services not covered by W/120, in particular implementation of environmental auditing and management systems, evaluation and mitigation of environmental impacts, and advice on the design and implementation of clean technologies.⁴⁶ The proposal is accompanied by a call for dismantling regulatory barriers to the temporary movement of natural persons.

The growing need for commitments in mode 4 will bring to the fore issues relating to recognition, qualifications, licensing procedures and international standards. It would be useful to have a compilation of existing qualification and certification requirements that affect market access for service providers from developing countries. It would also be important to facilitate the participation of developing countries in mutual recognition agreements. If the International Standard Classification of Occupation (ISCO) of the International Labour Organization (ILO) is used for establishing occupations relevant to trade in services, developed countries could make exemptions from the economic needs test for developing countries, specific to certain occupations listed under environmental sectors.

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3. Classification

National and international classifications of environmental services are rather removed from market realities. A number of WTO Members have taken the view that the W/120 classification should be broadened to reflect the current structure and state of the industry.⁴⁷ Those who argue for reclassification invoke a number of drawbacks in the W/120. It establishes only partial correlation with primary media, especially in the case of water, and solid waste water management is certainly broader than sewage services, and solid waste management is broader than refuse and sanitation. The classification is limited to end-of-pipe services and does not cover pollution prevention or sustainable resource management. Also, it includes services provided in operation, but not services that make facilities operable. Finally, it does not capture services provided directly to industry.⁴⁸

The most far-reaching proposal for updating the W/120 comes from the European Union. It is based on, though not identical to, the OECD/Eurostat definition of environmental services.⁴⁹ It addresses the entire water cycle and the protection and preservation of landscape, ecosystems and biodiversity, which are also relevant to water services.

The most controversial point in the EU proposal is the inclusion of *water for human use and wastewater*, which would explicitly bring water distribution under the GATS classification. The W/120 covers sewage treatment and *tank emptying* only; water distribution is not covered, let alone water per se.⁵⁰ CPC Prov. 18000 covers natural water in the *goods* section. In its revised versions (1.0 and 1.1), the CPC treats water services, particularly water distribution, more specifically but inconclusively. Version 1.0 includes water distribution services in production services (Division 86). Version 1.1 delinks *water distribution* (reflected under *services*) from *collection and purification* (reflected under *goods*). It is difficult to see the rationale behind these changes. In any case, these versions have no status in the WTO.

Some argue that water distribution cannot be considered an *environmental service*. Others argue that water distribution cannot be considered a service at all, but rather (the production of) a good. Yet others consider potable water to be an exhaustible natural resource. Economic, political and social considerations underlie this seemingly technical debate as the inclusion of *water collection, purification and distribution services* may raise questions about market access *versus* access to and control over water resources.⁵¹

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It is important to realize that environmental services, whether they are classified under the W/120 or not, fall within the scope of GATS, subject to exemption stipulated in Article I:3 (b).⁵² In other words, the lack of agreement on the classification does not exclude water services from the scope of the negotiations, and the requests made by the European Union to its trading partners are very indicative in this regard. However, the explicit inclusion of new services in the classification may have an accelerating effect on the negotiations as classifying a service normally prompts new requests in that particular area.

An important feature of the W/120 is that services sectors are classified in a mutually exclusive way. In other words, services in one sector cannot be covered by another sector. This has implications for any cross-sectoral approach to the design and delivery of integrated environmental services. Attempts are being made to take account of environmental end-use services or services with an environmental component in order to secure commercially meaningful commitments.

The *core* and *cluster* approach is used in the EU proposal for a new classification of environmental services. To preserve the mutually exclusive nature of W/120, the proposal comprises only services that can be classified as purely environmental. The proposal does not include conceptual services such as design, engineering, R&D and consulting, which are classified elsewhere in GATS. Instead such services would be subject to *cluster* negotiations that would result in these services being scheduled in GATS sectors other than environment.

There are concerns about the *core* and *cluster* approach as it could result in unintended commitments. It was suggested that a *checklist* should be drawn up for *cluster* services, with Members able to consider for each service on the list what sort of commitments – if any – they wish to make. Arguably, the checklist would promote recognition of the economic linkages between different services, while preserving the voluntary, bottom-up nature of GATS commitments.

While WTO Members may resort to their preferred classification, the use of new definitions, overlaying the CPC classification, may raise adaptation problems as the translation of existing commitments from one classification to another may imply their modification, thus reducing the legal certainty and possibly even leading to a roll-back on commitments made. Classification issues are also relevant to the current GATS 2000 negotiations about future commitments. These commitments are made on a sectoral basis, and the classification of services is of vital importance in this context.

The use of different classifications in bilateral requests and offers has already led some WTO Members to argue for addressing classification issues on a multilateral basis and in the competent body, such as the Committee on Specific Commitments. Maintaining a focus on the classification proposal by the EC could limit the possibilities for other countries to engage in these discussions. This is particularly true of developing countries, which, by and large, do not see any market access opportunities in the sub-sectors covered by the EC proposal. It is important to promote a more inclusive approach.

As is the case of environmental goods, it would be difficult to promote convergence on the classification issue, without linking these discussions to the negotiations on market access, especially now that the offers are on the table. The work on a disaggregated classification should take fully into account developing countries' interests. The various types of services related to the environmental sector could be captured in a *model list*, which would be instrumental in facilitating the negotiations on market access, particularly in scheduling specific commitments and identifying possible trade-offs. Some ideas have already been put forward, for example in the above-mentioned proposal by Colombia. Similar proposals have been made for other, non-environmental sectors.

4. Domestic regulations

Another area that needs to be dealt with in parallel with the negotiations on market access is domestic regulations. While WTO Members have the possibility of tailoring their commitments through the bottom-up approach to define their way to market access, there is a great deal of pressure on national and local regulatory authorities, which often lack the necessary resources and capacity. Detailed knowledge of regulations is becoming more and more important to the negotiations. In a sense, it would be fair to say that trade negotiators should know what regulators know and vice versa.⁵³

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For example, detailed information is needed on the regulatory and administrative regimes influencing the provision of environmental services in different regions and localities and on possible future changes to these regimes. Since commercial presence and the movement of natural persons are crucial to the delivery of environmental services, this information may touch on foreign investment regulations, immigration restrictions, health and environmental requirements, property, planning and zoning laws, competition policies, particularly in relation to the regulation of utility monopolies, company laws, and intellectual property regimes.

The GATS recognizes the right to regulate and does not prevent foreign service suppliers from being subject to the prevailing regulatory requirements – or even to additional, stricter requirements, provided that they are scheduled as national treatment restrictions. It is important to make sure that trade liberalization does not impair the ability of Governments to impose performance and quality controls on environmental services and to otherwise ensure that services providers are fully qualified and carry out their tasks in an environmentally sound manner.

The existing disciplines on domestic regulation (Article VI) have a limited impact on public services. However, any future disciplines negotiated under Article VI:4 may greatly influence government regulation in this area. WTO Members should assess the ongoing negotiations on disciplines for domestic regulation in the Working Party on Domestic Regulation in the light of their regulatory requirements. According to Article VI:4 of GATS, such disciplines should ensure that certain domestic regulations, namely measures relating to licensing and qualification requirements and procedures, and technical standards, are no more trade-restrictive than is necessary to ensure the quality of the services. Depending on the scope of future disciplines and the specific design of a *necessity test* in such disciplines, certain domestic regulation such as quality standards or universal service obligations could be seen as more burdensome than necessary. This may put them under pressure from the multilateral trading system.

An important question is whether there will be an overlap between measures subject to future disciplines and measures within the scope of Articles XVI and XVII, or will the disciplines and the articles be mutually exclusive? In his recent book, Krajewski argues for a clear distinction between market access (and national treatment) on the one hand, and domestic regulations disciplines on the other, without the possibility of an overlap. Such an approach would make it clear that only measures mentioned in Article XVI need to be scheduled as market access restrictions (and nothing else). However, the author is not sure that his view will prevail.⁵⁴

E. Systemic issues

1. Technology-based approach to liberalization

The opposition to dealing with PPMs in the negotiations on EGS is understandable. After all the WTO legal order is based on national treatment, and not mutual recognition. At the same time, it is ironic that the potentially “most important agreement on trade and environment in the WTO history”⁵⁵ should shrink from the challenge. Can there be ways of tackling PPMs, other than using them as criteria in the negotiations? Since the environmental industry is essentially a technology-led response to environmental regulations, finding such ways would require looking into environmental technologies, — that is, promoting “technological equivalence” in developing countries.

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There are three areas for which transfer and effective use of ESTs could be of particular importance over the next few years: addressing urban pollution, such as air- and water-borne pollution; enhancing energy and material efficiency — this includes saving devices and technologies and the use of renewable energy and materials, including biodegradable material; and complying with environmental requirements in export markets, particularly those relating to management of hazardous metals and chemicals and related traceability requirements.

There are difficulties in defining cleaner technologies and classifying those in the HS. Clean technology is a concept of relative environmental performance, which is subject to change over time. Also, cleaner production technologies tend to be sector-specific. The differences between end-of-pipe and clean technologies should not be exaggerated, however. For example, filters, often mentioned as a prime example of end-of-pipe technologies, are used in clean processes.

The problem of relative environmental performance could be overcome either by setting up a proper review mechanism or by including entire plants or technologies in the list.⁵⁶ The latter are devoid of the problems associated with multiple-use and relativism in time; That is, a recycling plant remains a recycling plant even if the technology of recycling changes substantially. Examples of entire plants that could be covered are numerous: recycling plants, plants for waste management, sulphuric acid recovery plants, plants for cogeneration of heat and power. The same approach could apply to entire technology systems, for example oil recovery systems. In many cases there appears to be a possibility of classifying entire systems under a single tariff heading. However, more work is needed in order to find the appropriate tariff headings or to create new ones as well as to address NTBs.

Many environmental problems, particularly in developing countries, do not require state-of-the-art and proprietary technology; rather, they could be addressed through developing management skills, combined with appropriate technology. Second- and third-best solutions are often an efficient as well as an effective way of overcoming environmental and resource management problems. In this regard, endogenous technology solutions are sometimes seen as providing a better match to local environmental problems and therefore merit more attention.

While trade in EGS is the most direct route for technology transfer, it is important to link it to other channels such as investment, licensing of intellectual property rights, government procurement, multilateral environment agreements (MEAs) and development cooperation. The disjunction between the provisions for technology transfer in some MEAs and the actual transfer of ESTs is indicative of the limitations of an inter-governmental approach to this problem. The Working Group on Trade and Technology Transfer should be able to make a substantive contribution in this regard. The role of instruments such as the Multilateral Fund under the Montreal Protocol (MP) should also be noted.

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2. Public services and market access

As there is a strong public function to the provision of certain environmental services, for example in water supply and waste management, many Governments have established *monopoly or exclusive supplier rights* in respect of public utilities. Whether or not monopolies persist, or are replaced by dominant suppliers, is often due to the nature of the technology. Advances in technology prompt from time to time changes in the

allocation of property rights increased marketability of certain public services, and make possible arm's-length regulation instead of State ownership. However, the lack of GATS commitments in some of these areas suggests that government may be playing a role in the persistence of monopolies beyond areas where it is a technological necessity.

There is a seeming inconsistency within the compromise of allowing exclusive rights while at the same time subjecting them to the obligation of non-discrimination. However, it could be the access to the bidding process where non-discrimination plays a role. Also, exclusive rights might be local, or restricted to a certain activity, and several suppliers holding exclusive rights could coexist on the territory of one Member. The legal complexities following from this compromise lead some experts to argue that public services are located inbetween the traditional public law and private law spheres and can be conceptualized as a third sector.

For example, Article VIII provides disciplines on monopolies and exclusive service suppliers, but it is not clear to what extent Article VIII is relevant to natural monopolies such as water services. Article XIII of the GATS exempts government purchase of services for its own use from the most favoured nation (MFN) obligation as well as from the market access and national treatment disciplines (GATS Article XIII). However, the obligations under Article VIII relating to procurement or subcontracting of services by private firms, with an exclusive supplier right granted by Governments, are not clear.

The same provision that exempts government procurement from the main disciplines of GATS mandates negotiations on government procurement in services, which may eventually lead to commitments to open up some government purchases to foreign service suppliers. The provisions of the Agreement on Government Procurement⁵⁷ may also affect government procurement of environmental services. Most of the WTO Members that have signed the Agreement have included the W/120 classification of environmental services within the scope of their GATS commitments.

Discussions in the Working Party on GATS Rules and the Committee on Government Procurement⁵⁸ have touched on issues relating to various contractual arrangements between a public authority and a private entity, for example BOTs, management contracts or concessions. Some argue that management contracts, and even concessions, come very close to government procurement, and that BOT arrangements are actually a combination of government procurement and concession. The widespread confusion in the use of these terms obscures the issue even more. It has been questioned whether the right to participate in the bidding process amounts to granting market access.

As disciplines on subsidies are yet to be developed under GATS, more sector-specific analysis of subsidies and their effects – positive or negative – would be helpful to trade negotiators.⁵⁹ Environmental services could be an important area for such analysis.

For the moment the WTO Members are negotiating under the mandate of Article X, but the issues of desirability and feasibility have not yet been resolved. The exchange of information called for in Article XV has not produced the expected results. Only four Members have responded to the questionnaire that was circulated.

Even *services supplied in the exercise of governmental authority* (GATS Article I:3(b)) have not escaped ambiguity. The definition of government services in Article I:3(c) underlines the *non-commercial* basis and *non-competitive* supply of a service. However, there are differing interpretations of these conditions. According to some, in order for the exclusion to apply, the service must be supplied neither on a commercial basis nor in

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competition, and if both these conditions are met then the exclusion applies (“cumulative test”). For others, it is sufficient that one of the conditions be met for the exclusion to apply (“disjunctive test”).

There is a need to determine what *commercial* means in the context of Article I:3(c). A wide interpretation of *commercial* means *buying and selling*, a narrow, *profit seeking*. The implications are important; even though many public services are supplied on a non-profit basis, there is a trend toward commercialization and commoditization of certain services.

The meaning of *competition* also needs to be clarified. As noted above, competition in environmental infrastructure services is mostly *for* rather than *in* markets — that is, *before* the supplier enters a particular market. What about *after* the entry? If there are public and private suppliers in the market, does this mean that the service is supplied on a competitive basis to the extent that both providers target the same consumers?

In his analysis of the impact of the General Agreement on Tariffs and Trade (GATT) on public services and the ways to manage this impact, Krajewski suggests that certain WTO Members feel that specific limitations are necessary because the exemption stipulated in Article 1:3(b) is not sufficient, and he indicates three options available to WTO Members wishing to exclude public services from the scope of GATS.⁶⁰

First, the regulatory regime of a public service may exclude it from the scope of the Agreement, and deregulation can bring it within the GATS coverage. In other words, liberalization and privatization of public services have a direct effect on the potential sectoral scope of GATS.

Second, WTO members can schedule limitations to their market access and national treatment commitments or not make any commitments in sectors considered public services. However, the general GATS disciplines would still apply to these services. Moreover, these limitations or non-commitments may come under pressure in subsequent negotiating rounds.

Third, WTO members may take legislative steps to narrow the scope of GATS. Since renegotiating agreements is a difficult proposition, a practical alternative is an authoritative interpretation of the scope of GATS according to Article IX:2 of the Marrakesh Agreement Establishing the WTO.

F. Conclusions

Tariff protection is being dismantled, and scope for other instruments to open up markets in environmental goods seems to be minimal under a strict application of national treatment. If environmental goods were to receive special treatment, the negotiations would be of a complex nature but limited potential impact. The early sectoral liberalization at APEC may well become a late sectoral liberalization in the WTO, with Members gradually coming to the realization that, while nothing much can be done through the negotiations, a great deal can be done through trade promotion and facilitation measures and technical assistance.

On the theoretical front, there are attempts to breathe life into the WTO negotiations on environmental goods through finding “cross-overs” with areas where significant barriers to exports from developing countries persist. Agriculture is sometimes mentioned

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as a useful starting point.⁶¹ One category of sustainable agriculture, with well-defined international standards, is organic foods.⁶² Textiles may be another area, especially products made using natural chemicals and dyes. However, given the complexity of negotiations in these other areas, this approach may create more problems than solutions.

A more practical alternative is to trade off EGS with other products in the context of the *single undertaking*, and it is becoming increasingly clear that this kind of bargaining is indeed taking place. This is fair enough, considering that the inclusion of paragraph 31 (iii) in the Declaration was prompted by negotiating dynamics that had to do with things other than trade and the environment, and the main *demandeurs* in the environmental area lobbied hard to ensure that the current trade negotiations would be concluded on the basis of “everything is agreed, or nothing is agreed”.

For some EPPs, including those based on PPM-related criteria, developing countries could seek to improve market access through means other than the negotiations in the NGMA. Concerns related to standards, certification and conformity assessment procedures could be addressed under the Agreement on Technical Barriers to Trade, which covers, for example, organic agriculture. The CTESS could also play a role here. Some countries argue for the inclusion of agricultural EPPs within the scope of the negotiations, which would bring the Committee on Agriculture into the picture. Developing countries could find it useful to explore creating markets in EPPs outside the WTO, through trade facilitation and promotion measures.⁶³

The checkmate situation in the NGMA with respect to environmental goods is in stark contrast to the high level of activity in the negotiations on environmental services. The basic problem of course, at least from a theoretical perspective, is the compartmentalized negotiations in the WTO, with the negotiations on environmental goods being somewhat of a misnomer. It would therefore seem that, rather than looking for “cross-overs” in the negotiations under GATT, WTO Members should take a broader perspective on the negotiations on environmental goods *and* environmental services, and explore ways to combine and interlace the two areas. As a first step, it would be important for trade negotiators to monitor developments on both fronts. For instance, a checklist may be created for environmental goods that are integral to the provision of environmental services in those sectors where the number and extent of requests are significant.

Some procedures and methods developed for services may eventually bring about more productive approaches to liberalizing trade in environmental goods. “GATS-like” approaches to liberalizing trade in environmental goods would include finding ways to promote technology transfer, using the purchasing power of the Government, affording preferential treatment to environmental goods supplied for priority investment projects, and aligning standards with countries’ own environmental and developmental objectives.

GATT rules do not prevent an import buyer from demanding that exporters bundle together goods and services. Proprietary technology may also be part of what a Government is including in its *terms of purchase and sale*. GATT Article III:8 allows Governments to put pressure on foreign suppliers to build facilities or transfer technology as offsets, and technology transfer conditions may be part of the deal.⁶⁴

There is a clear relationship between technological and regulatory capacity. Developing countries are under growing pressure to follow the developed countries’ lead in environmental regulations. On the other hand, standard-setting activity promotes the

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Some procedures and methods developed for services may eventually bring about more productive approaches to liberalizing trade in environmental goods.

homogenization of products, processes and environmental management practices, and imposes new requirements on developing countries, particularly their export sector. Developing countries' markets may also be affected by environmental regulations adopted as a result of technical assistance, which favours the donor country's suppliers. The role of export credit agencies in the delivery of environmental goods and services also needs further assessment.

Public services and private activities cut through the various areas of environmental activities, which are partly public and partly private. And as in any other area where there is public interest to tackle, the environmental area cuts across almost every field of WTO law. This suggests an alternative approach to the negotiations: to reduce the matter in its vast complexity and redefine the subject of the negotiations in terms of problem areas⁶⁵. Water and sanitation may be one such area, and the negotiations would then have to consider goods and services relevant to this area. Such an approach would obviate the need to define environmental goods and services in a more theoretical manner. Other possible areas are air pollution and the loss of biodiversity, or any other area where developing countries may have a strong interest. A negotiating package might include two or three such areas to provide WTO Members with a mandate that is politically balanced.

For instance, if WTO Members were to choose water and sanitation, a number of issues would have to be tackled. First, reduction or elimination of tariffs on relevant goods would have to be considered, as was the case during the Uruguay Round for pharmaceutical, medical and chemical equipment. If (some) Members were found to operate excessive standards, there would have to be negotiations on standards. With respect to international property rights (IPRs), Articles 66:2 and 67 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) could be implemented, with developed WTO Members providing incentives to technology transfer. Promoting technology transfer, in practical terms, might raise the question of whether there should be a subsidy programme, which would then lead to negotiations under the Agreement on Subsidies and Countervailing Measures. For instance, countries may support, specifically for domestic water and sanitation, the reintroduction of non-actionable subsidies, which is currently being discussed, perhaps including an exemption for environmental services. Balancing public services with private input would require looking into issues relating to government procurement and trade related investment measures (TRIMs).

Such an approach to dealing with environmental goods and services would allow for tailor-made solutions where countries may define a mix of public services and private input, always with a view to improving access to sanitation services, and under the regulatory conditions that they can impose or even negotiate under GATS Article VI. It may eventually lead to a sectoral agreement on water and sanitation, or it may stay at the level of coordination between different negotiating bodies and agendas. In any case, the CTESS would have a unique role to play in terms of communicating these various agendas to other negotiating bodies.

It is a task for the future to develop a comprehensive negotiating approach applicable to both goods and services for sector-specific agreements in the various fields of exclusive rights. The most promising avenue, it would seem, is exploring the negotiating approaches enshrined in GATS. To an extent, this may also be true of environmental goods, although such approaches are currently lacking.

There will remain problems that extend beyond the WTO's reach. While WTO Members have flexibility to protect basic environmental services in the GATS positive list

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formula, in reality developing countries may be pushed into opening up whether they like it or not. Forced liberalization may come in the context of the *single undertaking* as the negotiations are wide-ranging and offer many entry points for those countries seeking to exert pressure. Or it may come from completely outside the WTO process.

Some developed country Members may be exerting pressure in the regional negotiations for liberalization commitments that will make resistance in the GATS context meaningless. A number of regional integration agreements are being drafted, with a negative list on services.⁶⁶ Various models are being built, which sometimes lead to agreements on mutual recognition, for example in professional services, and chapters on investment, which are also based on a negative list approach. Most of these regional agreements are essentially standstill exercises. In other words, Governments do not make changes to their domestic regulations because of the negotiations. However, they do put members of these agreements on one track and create a ratcheting effect.

Pressure may also come through demands from multilateral financial institutions such as the World Bank, which may choose to condition future lending for environmental infrastructure projects on liberalization to allow for private investment flows. In 2002, private water companies operated in at least 56 countries and two territories, working closely with the World Bank and other international financial institutions and lobbying aggressively for the privatization of water in large cities.

In all of these scenarios the key issue is one of power imbalance as well as the lack of what is referred to in the 2003 UNCTAD *Trade and Development Report* as *positive coherence*. Promoting positive coherence will require finding new modalities for, and new ways of channelling institutionally the problems arising from, the negotiations.

This article draws on the written work and presentations by Thomas Cottier, World Trade Institute; Frederick Abbott, Chicago-Kent College of Law; Petros Mavroidis, Université de Neuchâtel; Markus Krajewski, King's College London; Aaditya Mattoo, World Bank; Dale Andrew, OECD secretariat; and Grant Ferrier, Environmental Business International. It benefited greatly from comments and views generously shared with the author by Alejandro Jara, Ambassador of Chile to the WTO, Scott Vaughan, Organization of American States; Manoj Joshi, Ministry of Commerce of India; Felipe Hees, Mission of Brazil to the WTO, Ronald Steenblik, OECD secretariat; Ulrike Hauer, European Commission; Mireille Cossy, WTO secretariat, as well as by his UNCTAD secretariat colleagues - Luis Abugattas, Mina Mashayekhi and Ulrich Hoffmann.

Notes

¹ Doha Ministerial Declaration, paragraph 31 (iii).

² "With a view to enhancing the mutual supportiveness of trade and environment, we agree to negotiations, without prejudging their outcome, on: (iii) the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services". Doha Ministerial Declaration, paragraph 31.

³ Guidelines and Procedures for the Negotiations adopted by the Council for Trade in Services on 28 March 2001 form the basis for continuing the negotiations, with a view to achieving the objectives of the General Agreement on Trade in Services, as stipulated in the Preamble, Article IV and Article XIX of that Agreement.

- ⁴ Dale Andrew, *Modernizing the List of Environmental Services: OECD Proposals in Energy and Environmental Services: Negotiating Objectives and Development Policies*, UNCTAD, 2003.
- ⁵ The most recent contributions to this debate by Dale Andrew of the OECD, Grant Ferrier of the EBI and Scott Vaughan of Carnegie Endowment are of particular interest.
- ⁶ See *Elements for Negotiating Guidelines and Procedures*. Communication from Argentina et al., Council for Trade in Services, Special Session. S/CSS/W/13, 24 November 2000.
- ⁷ US OTA (1994), quoted from *Environmental Goods and Services: An Assessment of the Environmental, Economic and Development Benefits of Further Global Trade Liberalisation*, COM/TD/ENV(2000)86/FINAL, OECD, October 2000.
- ⁸ *The Global Environmental Goods and Services Industry*, OECD, 1998.
- ⁹ *Environmental Goods and Services Industry Manual for the Collection and Analysis of Data*, OECD/Eurostat, 1999.
- ¹⁰ *Environmental Goods and Services: The Benefits of further Global Trade Liberalisation*, OECD, 2001, pp. 11-13.
- ¹¹ However, there are methodological problems with identification and measurement since existing data cannot easily be compared across these groups.
- ¹² The two categories are not mutually exclusive as some EPPs may be incidental to the delivery of environmental services.
- ¹³ For a number of EPPs, scale is a factor. They are environmentally friendly only when produced on a relatively small scale.
- ¹⁴ Less environmental harm is generally established according to the following criteria: (a) use of natural resources and energy; (b) amount and hazardousness of waste generated by the product along its life cycle; (c) impact on human and animal health; and (d) preservation of the environment. For more information on the concept and criteria of EPPs, see *Environmental Preferable Products (EPPs) as a Trade Opportunity for Developing Countries*, Report by UNCTAD Secretariat, UNCTAD/COM/70, Geneva, December 1995 [UNCTAD (1995)].
- ¹⁵ Production, processing, consumption or disposal.
- ¹⁶ See [UNCTAD (1995)], pp. 5-7.
- ¹⁷ These categories are not mutually exclusive, for example jute is superior to polyethylene and organic at the same time.
- ¹⁸ Ecosystem services can be traded through direct and local exchange, for example a national park with admission fees, or indirect exchange via intermediaries' trading certificates, for example a CO₂ certificate.
- ¹⁹ Actually the estimates vary from US\$ 350 billion to US\$ 550 billion, depending on the definition used. The two main sources are the Environmental Business International (EBI) and the Joint Environmental Markets Unit (JEMU). The significant differences in estimates have to do with the fact that the EBI statistics include certain sectors — water utilities, water treatment services and resources recovery — that do not correlate clearly with the JEMU statistics.
- ²⁰ *Environmental Benefits of Removing Trade Restrictions and Distortions*. Note by the Secretariat, Addendum, Committee on Trade and Environment. WT/CTE/W/67/Add.1, 13 March 1998; *Implications of WTO Agreements for International Trade in Environmental Industries*, ITC, 1999.
- ²¹ The leading exporter in the European Union is Germany (APC, water/wastewater, instrumentation), which accounts for 17 per cent of world trade and is second only to the United States; other countries with strong export positions are France (water/wastewater, APC), United Kingdom (water/wastewater, monitoring, APC), Denmark (water and waste) and Italy (waste, APC).
- ²² Extended information is available at <http://www.oecd.org/pdf/M00037000/M00037633.pdf>
- ²³ *Environmental Issues Raised in the Services Negotiations*, statement by Mr. A. Hamid Mamdouh1 at the Regular Session of the Committee on Trade and Environment of 29-30 April 2003, WT/CTE/GEN/11, April 2003.
- ²⁴ See *Factors affecting Transfer of Environmentally Sound Technology*, Note by the WTO Secretariat, WT/CTE/W/22, 1996.

- ²⁵ Interestingly, there is no consensus in APEC on the definition and categorization of the environmental industry. The definitions and categorizations employed by member economies differ greatly.
- ²⁶ Liberalizing Trade in Environmental Goods: Some Practical Considerations, Document No. COM/ENV/TD(2003)34/FINAL, OECD (2003), Paris [OECD, 2003].
- ²⁷ The proposed changes will be finalized by mid-2004 and a revised system will take effect in January 2007.
- ²⁸ Filters to purify industrial emissions into the air and water, sewage treatment equipment, potable water treatment equipment, recycling equipment etc.
- ²⁹ This problem is not specific to environmental goods, of course.
- ³⁰ World Trade Organization, Environmental Database for 2001, WT/CTE/EDB/1, 31 May 2002. According to the WTO Secretariat, over the last decade, between 10 and 11 per cent of all TBT notifications referred to some kind of environmental consideration. (In 1998 and 2000, the number of notifications were slightly above 15 per cent). This ranks among the single-most important categories of all TBT notifications.
- ³¹ The terms used by the WTO Secretariat in compiling the Environmental Database include carbon, clean, climate, conservation, eco-label, greenhouse, pollution, hazardous, indigenous, organic, modified organisms, packaging, toxic materials, soil erosion, wildlife and wood.
- ³² [OECD (2003)].
- ³³ Developing Countries' Trade in Environmental Goods, Conference Room Paper for an Expert Meeting on Definitions and Dimensions of Environmental Goods and Services in Trade and Development, UNCTAD, 9-11 July 2003, (TD/B/COM.1/EM.21/CRP.1) [UNCTAD (2003)].
- ³⁴ [UNCTAD (2003)].
- ³⁵ Japan has circulated a list of environmental goods, which is based on the OECD list, and includes energy-efficient products such as microwave ovens, refrigerators and video projectors, as well as other less-polluting and more resource-efficient goods.
- ³⁶ Qatar made a proposal for the inclusion of energy-efficient technologies such as combined-cycle natural-gas-fired generation systems and advanced gas-turbine systems. In a follow-up paper Qatar links the proposal with the objectives of multilateral environmental agreements, in particular the UNFCCC and its Kyoto Protocol, and claims that non-tariff barriers are serious impediments to global trade in these goods.
- ³⁷ There are fears that some chemicals, for example ammonia, can produce negative environmental effects in other sectors.
- ³⁸ On this issue, see the following article in this Review.
- ³⁹ Situations where a service provider is pre-selected as part of a development assistance package.
- ⁴⁰ Environmental Goods and Services in Trade and Sustainable Development, note by the UNCTAD secretariat. TD/B/COM.1/EM.21/2, 5 May 2003.
- ⁴¹ Both the CPC Prov. and the MTN.GNS/W/120 (hereinafter referred to as W/120) were established in 1991, the former by the Statistical Office of the United Nations, and the latter by the GATT Secretariat. The W/120 is in fact a simplified version of the CPC.
- ⁴² This categorization is based on the view expressed by Luis Abugattas, UNCTAD, at the Expert Meeting on Definitions and Dimensions of Environmental Goods and Services in Trade and Development, Geneva, 9-11 July.
- ⁴³ Strictly speaking, GATS Article XIX sets out the principle of "progressive liberalisation of trade in services", but not towards deregulation as such.
- ⁴⁴ Free Trade in Services Opening Dynamic New Markets, Supporting Good Jobs, Trade Facts, USTR, 31 March 2003.
- ⁴⁵ For more information in this area, see the following article in this Review.
- ⁴⁶ See Environmental Services, Communication from Colombia, Council for Trade in Services - Special Session, S/CSS/W/121, 27 November 2001.
- ⁴⁷ See Environmental Services, Communication from the United States, Council for Trade in Services - Special Session, S/CSS/W/25, 18 December 2000; Classification Issues in the Environment

Sector, Communication from the European Communities and their Member States, S/CSC/W/25, 28 September 1999.

⁴⁸ [OECD (2001)].

⁴⁹ The OECD/Eurostat definition goes beyond the classification proposed by the European Union for negotiation purposes.

⁵⁰ CPC 9401-Sewage Services-covers sewage removal, treatment and disposal services. Equipment used are waste pipes, sewers or drains, cesspools or septic tanks, and processes utilized include dilution, screening and filtering, sedimentation, and chemical precipitation.

⁵¹ It should be noted that GATS does not cover ownership of natural resources.

⁵² "...services supplied in the exercise of governmental authority".

⁵³ The following article examines in more detail the kind of information trade negotiators need from regulators and suppliers of environmental services, on the basis of experience of Central American and Caribbean countries.

⁵⁴ Markus Krajewski, *National Regulation and Trade Liberalization in Services: The Legal Impact of the General Agreement on Trade in Services (GATS) on National Regulatory Autonomy*, Kluwer Law International, 2003.

⁵⁵ See Scott Vaughan, *Trade Preferences and Environmental Goods*, in *Trade, Equity and Development*, Issue 5, 2003, Carnegie Endowment for International Peace.

⁵⁶ This approach is being advocated for example by Ilkka Saarinen, Ministry of Foreign Affairs, Finland. Report of the Expert Meeting on Definitions and Dimensions of Environmental Goods and Services in Trade and Development, TD/B/COM.1/59 and TD/B/COM.1/EM.21/3, 27 August 2003.

⁵⁷ The Agreement applies to both goods and services. Its current membership is essentially limited to developed countries.

⁵⁸ The Committee oversees the work of the plurilateral Agreement on Government Procurement.

⁵⁹ At present the GATS contains no specific rules. However, a country providing a subsidy to national but not to foreign suppliers of a service committed in its schedule must have entered a national treatment limitation to that effect. Whatever disciplines are developed will not apply to governmental services, because these are outside the scope of the GATS.

⁶⁰ See Markus Krajewski, *Public Services and Trade Liberalization: Mapping the Legal Framework*, *Journal of International Economic Law* 6(2), 341-367, Oxford University Press 2003. Some examples given by Krajewski are of interest. Bulgaria uses the term "services supplied under governmental authority" in its schedule and states that "commitments in environmental services do not include services supplied in the exercise of governmental authority". A footnote explains that these services are "regulatory, administrative and control services by government and municipal bodies related to environmental issues". Two members use the term "public services" in their schedules. The Dominican Republic listed prior registration of foreign investment as a horizontal limitation, but stated that registration is "totally prohibited in public services, such as drinking water, sewage...".

⁶¹ See Scott Vaughan, *op. cit.*

⁶² As the NGMA does not cover agricultural products, trade liberalization of agricultural EPPs could perhaps be discussed in the CTESS.

⁶³ The Plan of Implementation adopted at the World Summit on Sustainable Development (WSSD) calls on countries to "support voluntary, WTO compatible, market-based initiatives for the creation and expansion of domestic and international markets for environmentally friendly goods and services, including organic products, which maximize environmental and developmental benefits", paragraph 93 (b).

⁶⁴ *State Trading in the Twenty-First Century*, edited by Thomas Cottier and Petros C. Mavrodیس, World Trade Forum, Volume I, University of Michigan Press, 2001.

⁶⁵ This proposal was argued by Thomas Cottier, Director, World Trade Institute, at the Expert Meeting on Environmental Goods and Services, UNCTAD, Geneva, 9-11 July. Report of the Expert Meeting on Definitions and Dimensions of Environmental Goods and Services in Trade and Development, TD/B/COM.1/59 and TD/B/COM.1/EM.21/3, 27 August 2003.

- ⁶⁶ The recently concluded Central American Free Trade Agreement is very indicative in this regard. See the Post script of the following article.